

AMERICAN FRUIT GROWER

Vol. XXXVIII. No. 10

OCTOBER, 1918

Ten Cents a Copy



Edited by Samuel Adams

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How "SCALECIDE" Was Discovered

As the Remedy for Canker and Collar Blight

"Let me cut down that tree, it's not worth saving," said our superintendent in looking at an eighteen-year-old apple tree in a newly acquired orchard. "It is cankered two-thirds around the trunk and from the ground well up to the crotch," he continued.

"No," we responded, "we'll give it another chance. Next spring we will cut out the canker, disinfect and paint it. There are about four hundred other trees that need the same treatment."

But "next spring" we were busy planting a young orchard, and did not have the labor or time to cut out the canker, disinfect and paint the infected parts. It was summer when we got ready to treat collar blight and canker in a wholesale way. And then to our astonishment every canker and collar blight spot was healing up and new cambium forming around the diseased parts.

One dormant or scale spray with "SCALECIDE" that spring had already done the work

That was the discovery of "SCALECIDE" as the remedy for canker and collar blight. The illustrations to the right are from photographs taken four years later of the exact tree our superintendent wanted to cut down. There it stands today, a specimen of health and productivity, yielding six to eight barrels of high grade apples as its normal crop.

Have you any valuable trees going as that tree was going? Don't bother cutting out and painting. Use "SCALECIDE" as a dormant or scale spray, wetting thoroughly the cankered spots. Tyson Brothers, Flora Dale, Pa., have used "SCALECIDE" for fourteen years. They claim to lose less than one tree out of a thousand from collar blight and root rot in their 325 acres of orchards, yet the Pennsylvania Experiment Station states that two apple trees out of every hundred in Pennsylvania die annually from collar blight alone. Thousands of apple growers save money, save time and *save their trees* by using "SCALECIDE" as the complete dormant spray.

Write today for our Money Back Proposition and name of nearest agent or distributor. You take no risk. It will cost you nothing to learn the TRUTH. Address Dept. 11.

B. G. PRATT COMPANY

Manufacturing Chemists

50 Church St. New York City



In the circle above is shown the tree four years after our superintendent wanted to cut it down. To the left you will see the trunk, free of disease, with new cambium rapidly growing over. This tree was saved and made profitable by the use of "SCALECIDE."

The Orchardless Farms

By M. Brown, Arkansas

IT IS surprising when one makes a trip through a fairly well settled farming country, to meet with so many farms without the sign of an orchard, and here and there a few scrub trees that seemingly survived ill treatment by the cows and mules. Perhaps we see some old trees, more than fifty years old, that never had a saw or pruning shears in their tops, but have been pruned by chopping with an axe, or by sawing off the lower limbs to a height of ten feet, leaving snags from eight inches to a foot long, to rot out. These make cavities and hollow trunks for birds to build in, and for many insects detrimental to fruit trees.

When one inquires into the cause and reasons for these orchardless farms, where all members of the family, and especially the good mother who provides all good things for the table, are in favor of fruit, the farmer says that fruit trees won't do any good for him; that he has spent all the way from \$20.00 to \$50.00 and \$75.00 to get fruit trees, and there are only a few snags scattered over the place as the result of his efforts to obtain a family orchard.

When one inquires the source of his fruit tree stock, the answer is that he

bought them from an annually appearing peddler, and that sometimes some grow and live for a little while, but never do any good, and he has concluded not to plant any more.

Asking about the varieties, one is answered that the farmer himself doesn't know, the agent showed it in his book from some unknown nursery company. So one gets at the real cause of this condition, and that in a country which is eminently adapted to fruit culture. This is proved by the Mt. Meto Orchard Co., who produce the finest fruit ever exhibited on any market, defying the skill of the artist to reproduce its beauty, and unsurpassable in quality and size.

This orchard has produced specimens of Stark Delicious weighing 22 ounces, the same of Stayman, Stark's Early, Elberta, Engles' Mammoth Martaferus, weighing 18 and 19 ounces, or, in other words, 80 to 84 apples to the bushel. Yet that fails to convince even those who see it, and they say, "We can't do that," while I say, "Yes, you can."

Ignorance a Factor

The cause of the trouble may be summed up in this way:

First: Lack of ambition to post themselves by reading and learning that there are more than two varieties of apples other than Ben Davis or Arkansas Black, and

that there are more varieties of peaches than the Elberta. This now seems to be the limit of their knowledge.

Second: They must become conversant with the names of varieties specially adapted to their section and locality.

Third: They must learn to buy their nursery stock from a reliable nursery with a reputation for honorable dealing, and let the annual tree peddler representing unknown nurseries go by, for he has year after year gotten their money for scrub and cull stock, bought at a high price and without results.

Fourth: He must make himself believe that a fruit tree requires the same cultivation that a row of corn needs to make corn.

Fifth: He must convince himself that he must spray, for there is no way around that part. It remains an absolute necessity and must be done. When once tried and found easy, it is easy to get the habit.

Setting Out Trees

Having considered the above conditions, let us now see if we can find a place on the 20, 40, 60, or more, acre farm, for which I will not lay down any hard and fast rule, but we will say any farm can spare a plot of land 200 feet square, somewhere on the farm, land that will grow corn (we know many who waste more acreage).

Such a plot of land will accommodate, say, 32 apple trees; beginning on one side,

planting 8 apple trees in a row, 24 feet apart east and west, and 30 feet apart north and south, or in any way that may be most suitable, thus taking four rows for apple trees. For a succession that cannot be questioned for adaptation to this section, begin with five Liveland Raspberry, ripe June 20th; five Wilson Red June, ripe July 20th and last into August; five Stark's King David, ripe August 15th and last into September.

These are closely followed by Delicious. Five Delicious, ripe in this section September and later; five Stayman, which is a close mate to Delicious in quality and in splendid, hardy growth; five Black Ben, which, while the apple is not of the same high quality as all the foregoing, is one that must be considered as very useful in a farm orchard for the reasons that it is a good grower, an early and heavy bearer, is the best cooking apple of all and makes the finest white dried fruit of any variety. When baked it is simply immense.

Last, two golden Winesaps or Stark's Yellow Delicious. This would compose an apple orchard of 32 trees with a succession of varieties ripening from June to October or later.

Plant Peaches Also

Now we will have left from that plot of ground, room for 50 peach trees at 20 feet apart each way. These also should be chosen for succession of ripening. There are many varieties, and some of the early sorts are not of good quality. I will not, therefore, recommend them as a farm asset.

We will begin with Red Bird Cling, ripe about June 15th. This, in fact, is the first good peach of the season that will both handle and keep well, and that is good for all purposes. We will say five of that variety followed by five Arp Beauty. Following in order of ripening, five Eureka, an Iron Clad. Five Alton, five Elberta Cling, five Stark's Early Elberta, five J. H. Hale, five Engels' Mammoth, another Iron Clad, much better and more profitable than Elberta. Five Stark Heath Cling, five Honey-sweet Cling, five Holsinger Salway and, I may add, five Krummel's, October.

Grapes and Plums Also

This makes a list of 50 peach trees, covering the season in succession of ripening, and giving the family fresh fruit from June to the 15th of October and after, still leaving room in the said plot of ground for a row of grapevines and five plum trees—I might mention for these, three America and two Mammoth Gold. Good varieties of grapes are Eclipse, Ives Brighton or Delaware, Campbell's Early, Romel Fern, Munson and Muench, for this section. These may be varied in other parts of the country.

This fills the plot of ground of 200 feet square (less than one acre), leaving it in proper shape for easy cultivation and spraying, while many more plants may be set in the center of the tree rows, such as blackberries, raspberries, gooseberries and strawberries, besides leaving room for a farm vegetable garden between the rows.

What It Will Cost

The next question is "How much will that cost?" Thirty apple trees, two years old and first class in every way, can be bought from any first-class nursery for \$10.00. Fifty peach trees will cost about the same or less. Five plum trees, about \$2.00; 25 grapevines, about \$4.00, making a total of \$26.00 or less, aside from the little labor it will require to set them out, and you all know how long it takes to plow a plot of ground 200 feet square and to keep it in a proper state of cultivation.

What It Will Produce

Now comes the question: "What will this plot produce?" Well, the third year these 50 peach trees will produce a partial crop which may be given on an average of one bushel, more or less, per tree. The fifth year they will produce on an average of four to five bushels, and as many as that every year up to twenty years, provided they are properly pruned and cultivated.

The apple trees will begin to bear in the fourth year, bearing a few samples, and continuing to increase each year up to the age of seven years before bushels can be expected from each tree. At the age of ten years they will produce anywhere from four to seven bushels per tree, and will do that and more, for more than fifty years when under proper management. I have a record of ten-year-old trees producing 17 bushels of apples, and sixteen-year-old trees producing 28 bushels.

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No. 10

Home Electric Light Plants

By F. J. St. John

THE RAPIDLY growing interest in electricity as a force that can be employed by the farmer and his family, to save time and labor and to improve the farm home, brings up the frequent question as to how electricity for the country home is to be obtained and how it can be employed to the best advantage, once it is available.

The fact that the farm home is very frequently beyond the reach of the central power station makes it necessary for the farmer who is to enjoy electric service to call to his assistance one of the small, individual electric plants whose current is developed by the aid of a gas engine.

Engine-Driven Plant

The essential parts of the engine-driven individual electric plant are: first, the gas engine already mentioned, an electric

battery, in which electric current can be stored for lighting and other purposes when the plant is not running. It is run until the storage battery is fully charged, then stops automatically. Current for lights or for running small motors is then taken from the storage battery as needed. The plant will be run only two or three times a week to charge the battery or for occasional larger jobs that require an amount of current approaching somewhat the capacity of the plant.

Low Voltage

The voltage of the plant is a point that must be considered. In the cities the voltage usually employed for domestic service is 110. For the farm or country home,



An Electric Lighted Living Room in a Modern Farm Home. Note the Adjoining Den or Office with the Farmer's Desk Therein

generator which, operated at requisite speed, produces the electric current, a switchboard, to control the current produced and, usually, a storage battery or accumulator in which the current may be stored, for use when the generator is not operated.

The earliest form of engine-driven plant was one in which the generator was driven by a belt from an ordinary gas engine. This gave some light and power of course. Folks liked the idea, but demanded a plant with greater efficiency and one which would render dependable service without expert attention or without much attention of any sort.

The result finally was the direct-connected type of electric plant. Here the gas engine and generator are built into one unit and connected by a shaft instead of a belt. Engine and generator are both built on this shaft and of course the number of revolutions of the generator per minute must be the same as of the engine. Thus where the engine turns at 1200 revolutions per minute, the generator must turn at exactly the same speed.

Directly Connected Plant

The direct-connected plant is usually self-starting, having a "self-starter" operated after the style of the automobile starter. It will have a large storage bat-

where the buildings are grouped within a few hundred feet of each other and where the current is not to be carried great distances, the low-voltage, 30- or 32-volt plant, can be used most satisfactorily. An advantage of the low-voltage plant where a storage battery is used is that only 15 or 16 battery cells are required, since it is a law of storage batteries that 2 volts per cell is delivered.

Kind of Engines

While gasoline has been the generally accepted fuel for gas engines, great advancement has recently been made in the adaptation of kerosene as a fuel for lighting plants and it is being used in some instances with even better results than are obtained from gasoline.

The systems of engine cooling employed for electric plants are water cooling and air cooling. Examples of both systems can be found which are entirely satisfactory. Precaution is necessary in a water-cooled system, of course, that the water hopper shall not be allowed to boil dry, nor the water allowed to freeze where the plant is installed in an exposed location in a cold climate.

Boy or Girl Can Operate

No expert attention is necessary to operate successfully a well-designed, modern electric farm lighting plant. In many

homes the care of the plant is given over to a twelve-year-old boy or girl, or perhaps the housewife herself gives it the little attention necessary to its operation.

The result is that the fortunate owners of a good many electric farm plants are able to concern themselves largely with the electric service they receive, in other words with what the plants will do for them.

And this opens up a large field of possibilities, a field into which electricity is entering more widely every day, bringing comforts and benefits which are of peculiar importance in the farm home.

Comforts and Benefits

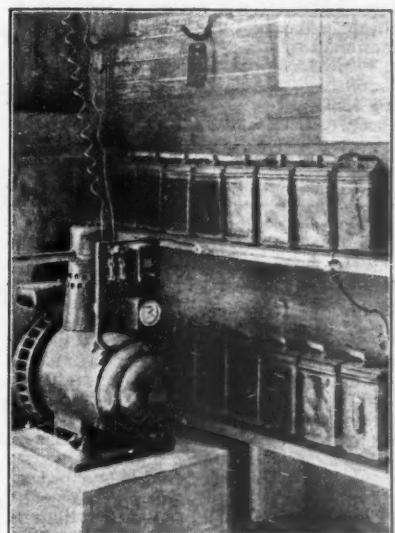
One of the most important features probably is the electric light, which can be had just as abundantly and of as fine quality as will be found in the city home. Good light has the same cheering, uplifting influence no matter where it is enjoyed but, from a practical standpoint, one questions whether good electric lights are not of more actual value in the country than in the city home.

To the city dweller electric lights are a convenience of course, but where they are used to light up the entire farm premises they are much more than a mere convenience. The farm buildings are the center of the farm factory, the place where the farming business gets its impetus and its inspiration. There are so many of the activities of the farm that are directly influenced by the matter of light or no light.

A One-Armed Man

But it is in the everyday affairs of farm life that this modern lighting helps out—or should we say, in the every-night affairs. Take the chores. The man who uses a lantern is a one-armed man. One hand must carry the lantern and the introduction of the lantern into the barn is a menace, anyway, because of the fire risk.

Electric lights mean added safety all round the farm premises, and they mean an atmosphere of well-being in the farm home that has never been secured by the use of kerosene lamps. This latter result is one which is far-reaching in its importance. It is an influence which is keeping



Typical Installation of a Modern Direct-Connected Farm Lighting Plant

the elderly farmer out of the retired farmer class, holding him to the farm, where his training and experience are of real value after his days of active labor are over. The same influence is awakening a new interest in the hearts of boys and girls for farm life and this suggests possibilities of a broad, a tremendous benefit to all agricultural activities.

Used for Many Things

But the electric service on the farm comprises so much more than just the lights. There is electric heat for the flatiron, toaster—the various devices commonly used, and more valuable still, there is electric power, about whose wide influence on the farm one might write a volume.

For electric power, even from the farm electric plant whose capacity averages about one horsepower can be used, the year round, day or night, to do a great variety of tasks that are of the sort to dismay and to discourage farmer folks, for they are drudgery of the veriest sort.

Continued on page 11



Electric Power in This Farm Home Takes the Drudgery Out of Washing

Tractors a Modern Necessity

ANY doubts that may have been felt as to the economy, efficiency and adaptability of the tractor on the farm, must have been dispelled by the big tractor demonstration recently held at Salina, Kas., under the title of the National Power Farming Demonstration.

125,000 people poured into Salina to see what the latest tractors would do. Among the farmers were many doubters, but the tractor seems to have been as persuasive as Goldsmith's pastor, of whom it was written that "Fools who came to scoff, remained to pray." So when these farmers saw what the tractors were doing, "those who came to scoff remained to pay," and many a man now owns a tractor who before this event was rather incredulous as to the reliability of the claims made by manufacturers.

It would be hard to say which were the better pleased—the men who were displaying their wares, or those who came to inspect, criticise and finally approve.

Many Tractors Shown

A bewildering array of tractors—upwards of forty makes—were on exhibition, as well as exhibits of plows and implements which were of intense interest to the farmers. One general feature or resemblance was the ability of the tractor to perform work according to specifications. Little disappointment was felt by manufacturers and engineers when the field tests were made. Some seasons ago it was no unusual sight to see a tractor stalled in mid-field, a humiliation to the demonstrator and a jest to the onlooker. Such sights were rare indeed on this occasion.

Today a non-stop record of 83 hours was established by a high-powered tractor that plowed nearly 82 acres in 78 hours, and estimated a little less than 2.5 gallons of kerosene to the acre.

Drawbar and belt tests of extraordinary importance were made. Farmers wished to know whether they were getting all that the manufacturers claimed for certain types of machines. A test was readily granted in all cases, and not infrequently the result was beyond the claim. It is now possible for the purchaser to know just what he may expect to get out of any tractor which he selects.

Various Types for Various Needs

Some tractors are good for all round work, some for special tasks. Some for one kind of ground, some for another. The

purchaser should inform himself as to what is best for his conditions.

Some small tractors pulled two bottoms, some many more. One big fellow drew 18 disk plows. A light machine plowed 1.9 acres in an hour and 36 minutes. This is a heartening record when we remember that the life of the allied nations depends upon our power to produce large quantities of food.

The tractor works in hot or cold weather, by night or day. It makes possible a great saving of man power. Formerly it was supposed that only a regular mechanic could manage the intractable tractor, but now a greatly improved and simplified machine is being made, and at the Salina meeting many women were demonstrating the ease with which they could be handled. One young woman, who had never driven a tractor before, volunteered to drive one of the beauties, and within five minutes she was executing fancy steps with it, so simple was the matter of guiding it.

Four Types of Tractors

The great advantage of the caterpillar type lies in the fact that it lays its own track, and thus its power to travel over ground impassable for other types.

There is the four-wheeled type. Two wheels balance and guide the machine, and two more large, heavy wheels furnish the pull and traction. Sometimes the two steering wheels are combined in one, leaving a three-wheeled tractor, and again there is but one drive or traction wheel.

There is the two-wheeled type in which the two drive wheels also steer the machine, and lastly, though it may not be technically admitted in this category, there is the converted automobile. There is a decided demand for this and it cannot be ignored.

In the tractor of today we find many of the causes of their improvement. Better materials are being used. Steel has replaced castings, and the finely adjusted machinery developed for the automobile has found its use on the tractor. Hence we find standard bearings that make for smoother running and longer wear. We find in the tractor of today a lubrication system as perfect and modern as that in the automobile. Ignition systems, so admirably attuned to the touring car, also serve the tractor, and modern radiation keeps the tractor cool even at its hardest work on the hottest days. Carburetion for the handling of various kinds of fuel is no longer an experiment, and the tractor pur-

chaser may with reasonable assurance look for a minimum of trouble with clutch, transmission, valves, piston, rings, fuel supply, differential, etc.

Other Features at Salina

Not only prominent Americans came to Salina to witness the event. Foreign visitors attended the demonstration, and these will doubtless carry the fame of the American-made machines to their own lands.

The occasion was further distinguished by a feature which was perhaps the most important part of the whole affair—this was the splendid opportunity for getting together, which the visitors made use of to the utmost, and by reason of which an immense amount of pleasure and profit was added, to the benefit of all who attended the demonstration.

The following is a list of tractor companies which exhibited at Salina and took part in the demonstration:

Acme Harvesting Machine Co., Peoria.

Ill.

Advance-Rumely Thresher Co., Inc., La Porte, Ind.

American Engine & Tractor Co., Charles City, Iowa.

American Tractor Corp., Peoria, Ill.

American Ford & Tractor Co., Oklahoma City, Okla.

Aulson Tractor Co., Waukegan, Ill.

Aultman & Taylor Machinery Co., Mansfield, Ohio.

Avery Co., Peoria, Ill.

Beeman Garden Tractor Co., Minneapolis, Minn.

Bull Tractor Co., Minneapolis, Minn.

Bullock Tractor Co., Chicago.

J. I. Case Plow Works, Racine, Wis.

J. I. Case Threshing Machine Co., Racine, Wis.

Cleveland Tractor Co., Cleveland, O.

Coleman Tractor Co., Kansas City, Mo.

Dart Truck & Tractor Corp., Waterloo, Iowa.

Dauch Mfg. Co., Sandusky, Ohio.

Deere & Co., Moline, Ill.

Electric Wheel Co., Quincy, Ill.

Emerson-Brantingham Implement Co., Rockford, Ill.

Henry Ford & Son, Dearborn, Mich.

Four Drive Tractor Co., Big Rapids, Mich.

Frick Co., Waynesboro, Pa.

Gray Tractor Co., Minneapolis, Minn.

Guaranty Tractors, Inc., Chicago.

Hart-Parr Co., Charles City, Iowa.

Hession Tiller & Tractor Corp., Buffalo, N. Y.

Holt Mfg. Co., Peoria, Ill.

Huber Mfg. Co., Marion, Ohio.

International Harvester Co. of America, Chicago.

Interstate Tractor Co., Waterloo, Iowa.

Joliet Oil Tractor Co., Joliet, Ill.

La Crosse Tractor Co., La Crosse, Wis.

John Lauson Mfg. Co., New Holstein, Wis.

Lyons Atlas Co., Indianapolis, Ind.

Liberty Tractor Co., Minneapolis, Minn.

Moline Plow Co., Moline, Ill.

Morris Motor & Tractor Co., Lincoln, Neb.

Minneapolis Steel Machinery Co., Minneapolis, Minn.

National Tractor Co., Peoria, Ill.

Nilson Tractor Co., Minneapolis, Minn.

Parrett Tractor Co., Chicago.

Peoria Tractor Co., Peoria, Ill.

Port Huron Engine & Thresher Co., Port Huron, Mich.

R. & P. Tractor Co., Alma, Mich.

Rock Island Plow Co., Rock Island, Ill.

Square Turn Tractor Co., Chicago.

The Russell & Co., Massillon, Ohio.

Turner Mfg. Co., Port Washington, Wis.

Velie Motors Corp., Moline, Ill.

Wallis Tractor Co., Racine, Wis.

Waterloo Gasoline Engine Co., Waterloo, Iowa.

Wisconsin Farm Tractor Co., Sauk City, Wis.

Some Proofs of Usefulness

Farmers' Bulletin 963, Department of Agriculture, Washington, D. C., publishes the results of an investigation conducted by the department among Illinois tractor owners. 54% of the more than 600 farmers interviewed, stated that they had not lost a single day in the use of their tractors during last year's season. The remainder estimated that they had averaged a loss of about three-quarters of an hour daily while the tractors were in use. It was further shown that 90% of owners operated their tractors, and that this method was more satisfactory than when hired help drove the machines.

A tractor user says, "I can take my tractor and one man and sow 400 acres of wheat, or prepare land ready for sowing in four weeks, while it would take 20 horses and five men longer, besides not doing the work as well."

fails. 19th—Make all the cull fruits into cider. 20th—Cut and burn all weeds and rubbish. 21st—Make the corncrib rat-proof by tacking wire mosquito netting over the floor and sides. 22d—Store the tools away after painting and repairing them. 23d—Cut off the tops of the asparagus bed just above the ground and burn. Give the plants a thorough cultivation, and a few weeks later apply a mulch of long manure. 24th—The cabbage tribe have made a rapid growth in the cool, moist weather, and should have the best of care to perfect them before storing next month.

25th—Dig up the carrots, top them an inch from the roots and pile up in good-

sized heaps. 26th—Draw the earth up about the winter celery plants, not for the purpose of blanching wholly, but to help them to a more upright growth and to facilitate storing. Keep the soil out of the hearts. 27th—The lettuce, cabbage and cauliflower plants sown out of doors last month, may now be shifted to the cold-frames. 28th—Dig up endive with a quantity of earth about the roots and set close together on the cellar floor. The plants will last until the holidays and blanch beautifully. Do not store away while wet.

29th—Pull turnips, top and store for the winter. 30th—Be getting mulching material in readiness for use.

An October Farm Calendar

By F. H. Sweet

Work that must be done:

1st—Finish planting rye and wheat. 2d—Cut the corn. 3d—Harvest fruit. 4th—Dig potatoes. 5th—Gather tender roots, beets, mangold-wurzels, etc.

6th—House the squash and pumpkins.

7th—Husk the September-cut corn. 8th—Make furrows in the grain fields to drain off surplus surface water. 9th—Stable the stock at night and protect from cold rains during the day. 10th—if you do not have

sufficient feed, raised at home, to carry the stock through the winter, buy at once.

11th—Fall plow.

12th—Draw in cured corn to husk on rainy days. 13th—Repair the buildings.

14th—Increase the rations of the fattening animals. 15th—Build a shed to protect the manure. 16th—Clean and whitewash the root cellar. 17th—Build a new ice house or repair the old one.

18th—Give all stock extra feed as grass

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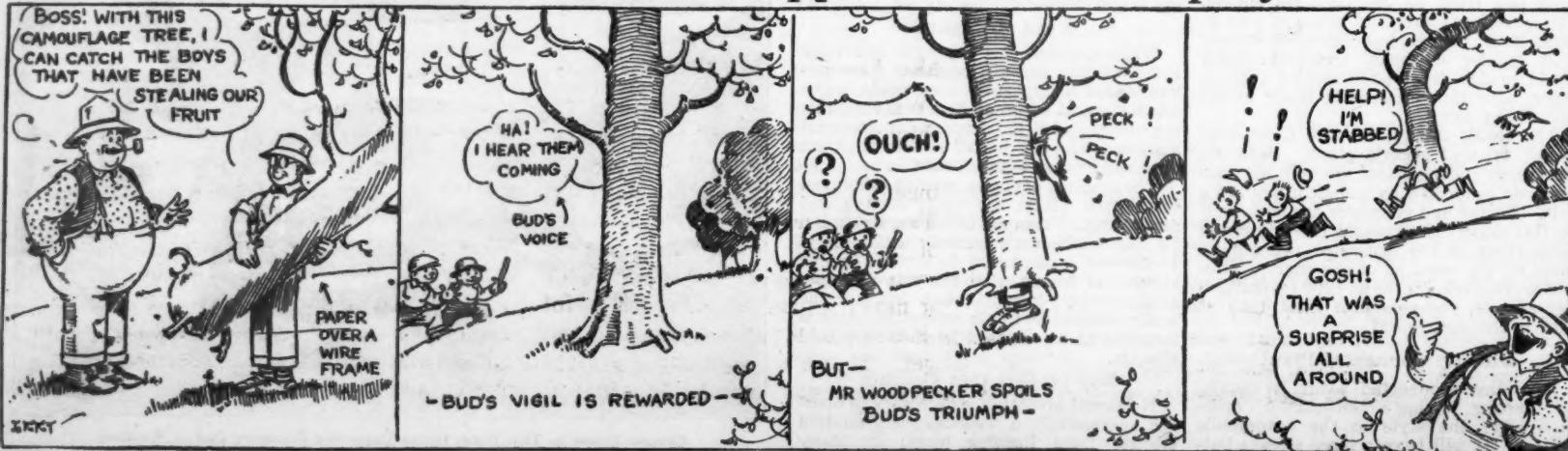
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Adventures of Bud Pippin and Simon Spray



Our Editor's Page

Harvest Time, Happy Time

WHOCAN help being happy in harvest time? We can't and we don't want to. We would be glad if every poor office clerk could be with us on the farm these cool, transparent autumn days when there are more good sights, sounds and smells than at any other season.

Early in the morning the air begins to hum with the filling of silos on all the neighboring farms. Mingled with this sound, so suggestive of winter comfort for well-cared-for animals, we catch the laughter and song of boys in the apple boughs. It's a gala time for them and loud are the jokes and long the laughs, and merry their songs.

The far mountains seem miles nearer and shades bluer than in the less colorful days, and between lie the meadows with the shocked corn. The woodland flames, and the hedgerows are overflowing with brilliant autumn bloom.

Little balmy airs bring us whiffs of hay, of apples, of drying leaves. Flocks of birds are busy as in springtime. No longer are they seen in pairs, but the true spirit of "get together" seem to possess them, and wherein June we saw two romantic bluebirds, we now see scores.

Under the big oak beside the barn we see a fire over which hangs a great kettle. Our noses seem just naturally to elongate in that direction and tell us that what is cooking out there is apple butter. Oh my! who wants to sniff the air of a cafeteria or the scent of the subway at such a time?

Worm Your Trees

MANY orchardists seem not to appreciate the great destruction wrought by worms. We have just seen the great damage done to a number of fine peach orchards, lost through lack of the owner's supervision in this respect. The autumn is the best season for worming.

Another precaution, even more important in some localities, is the protection of all young trees from the attacks of rabbits, rats and mice. Use some form of tree protector, wire mesh tree guards are by far the best. The winter sharpens the appetite of these plagues. Snow seems to tempt the rabbit to rear up on his hind legs and gnaw the tender bark as high as he can reach, while the crafty rats and mice burrow under snow and mulch, and feast upon the roots.

Send for "Rodent Pests of the Farm," Farmers' Bulletin 932, United States Department of Agriculture, Washington, D. C.

A Privilege to Live Now

HAVE you ever given a thought to the compensations that accompany this great war? Just for once let us turn our eyes from all the horror and pain and give ourselves up to the reflection that what we are gaining is better than gold. It may make us more cheerful, and will help us to face our privations and anxieties in the

right spirit of contentment instead of in one of the rather ignoble self-pity.

In the first place try to realize your wonderful good fortune in being alive at a time when the world is full of more intensely interesting events than ever before in its whole history. Even on the surface so much is happening that one must be wholly blind and deaf whose life is not now full to the brim of thrills and excitement. The papers have daily more in them than concerns your interests than they did in a whole year prior to this great event. The books that are being written, the comments that are being made by brilliant observers, provide a liberal and stimulating education along worldwide lines.

All this is on the surface, but look a little deeper and watch the seething currents of change and progress which are speeding onward to conditions such as we have never experienced. After the war what? We hardly know what to look for, only we are confident that much that is strange and new, much that is fine and free, will develop from the turmoil in which we now struggle half-blindly.

The theory of government may remain the same in our free country, but its manifestations will be largely different. Commerce will develop in unexpected ways. Transportation will be revolutionized. The business world will no longer be exclusively a man's world. Capital will hold a new relation to labor and wealth will be proportionately taxed. Liquor, bad habits of any kind that interfere with the fullest personal development, will be held in disrepute. A wider, fuller sentiment of democracy will prevail.

And remember—our government is not an autocracy. Such changes as are made will be with the full consent and voluntary aid of *you*, the people. Assuredly these changes will not be for the worse. The men who have gone through the furnace fire of service, as well as those who bade them good-bye in anguish of spirit, will be given a clearer vision of the horrors of a form of government which can plunge continents in blood. They will want nothing which savors of the control of mind and body which gave Germany the hold on her people that made her aggressions possible.

We are living in an age of unexampled progress and hope. If we can in any sense be worthy of the privilege it is a great one.

Take Care of Machinery

THE WINTER care of useful farm machinery that has worked for you all summer long, is no less essential than the proper housing and feeding of faithful farm horses. The man who neglects this is laying up lots of trouble for himself next spring. Machinery is expensive—it will not become less so for many a long day to come. Not only will it be high, but it will be scarce and hard to get. If you let your old machines go to pieces, you may have to do without.

Drain the pumps and engines of your spraying machines so that there may be no danger of freezing and cracking this winter. Set your tractors, engines and tools under shelter. Grease and oil the parts that might grow rusty and stiff. Repair even a trifling break—in short put all in good working order. When spring comes you will be very happy not to have to wait while a host of small neglects has to be remedied.

Please Give Tractor Experience

FOR THE SAKE of others, please, all you readers who have made use of tractors and trucks this summer, let us have your experience and tell us just what the advantage and disadvantages were in your opinion. Operating expenses and time-saving must enter into such calculations, and we will pay liberally for such articles as will satisfy the inquiries of many of our subscribers who are evidently halting in their decision for or against these machines, for lack of first-hand knowledge. Send us photographs when possible, showing the tractors or trucks in operation.

The Fourth Dimension—Land, Air and Sea. What Next?

WHEN the great war began, four long years ago, the Germans had estimated that an easy triumph would be theirs. Their calculations, though careful, were proved to be miscalculations, as even they themselves know now.

The prompt entrance of England into the war came as a stunning surprise. The later action of America was a shock at least equally severe. These have been their greatest psychological miscalculations so far, though they have not been the only ones. Their physical miscalculations are being exposed one after the other, as the allies swing slowly on to victory.

The Prussians looked out greedily over the earth and were sure their advance by land would be irresistible. But before they reached their goal they were halted. That was not pleasant, and they turned their eyes to the sea, where the British fleet blocked their surface advance. So the submarine plunged deep and rose up to kill. Yet here again they were frustrated in the fulfillment of their aims, and they lifted their gaze skyward, and their airships were launched, hundreds upon hundreds of them. Up they went, raining death upon non-combatants.

Yet how is it today? They have failed of their objective in the heavens above, in the earth beneath and in the waters under the earth. Unless these "supermen" discover the fourth dimension of space and attack us, so to speak, where we never knew we were, there is scant hope for them. And even were that fourth dimension discovered overnight, we wager that next morning they would find some Yankee boys waiting right on the edge of it, to show them just how far they would be allowed to go.



Meet Mrs. Munson—who has two in the Army—and two selling W. S. S.

MRS. ALGER tells me I look ten years younger since we got our Colt Lighting and Cooking Plant, and I believe her. I know I feel lots younger. It gives me more time to myself than I've ever had before. I visit friends now as I haven't done since I was married.

"Now that we have a Colt Light the Red Cross workers come to our house in the evenings to sew. They say it is a good deal easier to work by this soft, strong, white light, and they certainly do more work than they used to.

"I can't help smiling when I see the way boys have taken to calling on my two girls of an evening, to sing and dance or play games. The whole atmosphere of the place seems more alive, more wide-awake. The lights seem actually life-giving, as plants grow in the sun.

"Out in the barns the Colt Light is a perfect Godsend when the days begin to shorten. James has said to me dozens of times: 'Mother, since we got the Colt Plant this place runs like an automobile engine—easier and smoother at night than it does in the daytime.'

"All our old fear of the barns catching fire from matches or lamps has gone. We pull a tiny switch and the barn is flooded with light. We shut off the switch and out she goes. No matches or fuses with lanterns.

"Nothing would ever persuade me to go back to the old days, cooking with coal or wood or kerosene. Our Colt gas cooking range has forever banished those dreary hours over a hot fire! I shudder when I think of them. In the bottom of my heart I pity the poor women who are still chained down to such a tiresome, listless life. Cooking is a real pleasure with a Colt Cooking and Lighting Plant.

"And the Colt is so wonderfully simple! We've had it over a year and never know it is in the house. Not a sound. No chugging engines. Nothing to get out of order. The Algers have had their Colt Plant seven years and have not spent a penny for repairs."

(Business of making more flagjackets)

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TRADE MARK

The Colt system costs less than any other. It is so small it can stand in a corner of the cellar or outbuilding. The operation of plain water on crushed stone (carbide) produces the gas. These are added once a month. It is so safe that 700,000 miners use it for miners' lamps. Write us today for the names and addresses of enthusiastic neighbors, who can tell you all about it.

J. B. COLT CO., 42nd Street Building, New York



What Home Should Be

WE ARE not prepared to preach any sermons to our readers on their individual lives, but we do say that it is far easier to make the best of oneself if one has made the best of one's home. The two processes have some points of resemblance. It is not your fault if you came into the world with a nasty temper. It is something to be heartily ashamed of if you allow it to continue through life. But are you going to improve until you see your fault? Not likely.

So with your home. You may have been forced to take it as it is, but if you see no defects in it you are not going to try to improve it. The word "home" should mean to all the dearest place in the whole world. But it is hard to hold some homes dear. Almost any home has possibilities of attractiveness, and as the majority of those into which the AMERICAN FRUIT GROWER goes, have the blessed advantage of being in the country, they are a long way already on the road to beauty.

Mere space has a powerful charm as weighed against the crowded condition of cities. So often the city home has such unlovely surroundings that one can only try to make up for them by adding some lovely touch within—outside appearances are hopeless.

Get Busy on Grounds

In this article we are concerned with the outer aspect of the rural home. What should it look like? "The first home was a garden, and ever since then the two have been inseparably associated." The mere words "a charming home," suggest a place where blossoms and perfume are. Not necessarily a garden in the accepted sense of flower beds, probably the Garden of Eden was not so modern as that, but growing things are as necessary to our ideal of home, as food and shelter, and their appeal has come down to us through the ages.

"If I had two loaves of bread,"

Mohammed said,

"I would sell one and buy

Sweet hyacinths to satisfy

My hungry soul."

But sweet hyacinths must be considered in a later article. Flowers belong to summer, to soft, sunny days and warm airs. Summer is at an end, and stark winter looms in the distance. Even before December roars down upon us the late fall nips nose and toes. A chilly poet has asserted that after October comes "No warmth, no cheerfulness, no healthful ease, no comfortable feel in any member. No birds, no flowers, no butterflies, no bees, No-vember."

After November comes winter in earnest—cold and wind. These are the two things we most wish to avoid in the months ahead, and now is the time to insure the comfort of future winters by ordering trees for a windbreak. It will prove to be a double blessing as shelter in winter and ornament in summer. It will be, partly at least, composed of evergreens, and these will cheer the season of bare boughs and will form a delightful contrast to the fresh leafage of summer.

Protection of Windbreak

It has been demonstrated that a good windbreak sensibly protects a space five times the width of its height. Thus, if your windbreak be 20 feet high, it will temper the wind for 100 feet to leeward. What a safety zone in which the children may play out of doors, even in severe weather. The livestock appreciate such a protection, and so does the man who feeds and milks. The benefit to orchards and growing crops is well known. Where the moisture content of the soil is too low, the windbreak checks evaporation, and danger from late frosts is decreased.

Begin your planting this fall if fall planting is advisable in your section. Your nurseryman or state experiment station will give you definite information in regard to planting dates. In no case should there

be less than three rows of trees in the wind-break, and these should be set alternately in the rows, or "dodged" as some call it, the trees in one row being set in front of the center of the space between the trees in the row behind.

Some quick-growing tree may be selected for the back row. In locations where it thrives the Lombardy poplar will make a surprisingly rapid growth, and may be set close together. In front of these some lower and denser variety is advisable. By all means use evergreens for the front row, better still for the two front rows. They are by far the most wind-resistant growth.

Planting Evergreens

When sent from a reliable nursery, evergreens are always wrapped with burlap around a large ball of earth. This ball should not be broken, as it continues to nourish the tiny feeding mouths of the rootlets, and when they are not torn from contact with the earth, the transplanted tree will be quickly established. With a tree so dug and wrapped by the nursery, it is easy to set it at just the same depth in the ground that it was before, and this is important.

Remember that stable manure will kill an evergreen if it comes in direct contact with the roots, so dig your hole plenty wide and deep, spread several inches of strawy manure in the bottom and then lay a layer of earth over this. The roots will still get the benefit of the fertilization. Place the ball of earth in the center of the hole and water liberally—a pailful is none too much. Fill up the space round the ball with the earth dug from the hole and pack firmly. During the first winter help the transplanted tree by giving it a mulch.

A winter mulch, as you may know, is not meant to keep the frost out, but rather to keep it in and so prevent alternate freezing and thawing and heaving of the earth, with consequent unsettling of the roots. Wait until the earth is well frozen before applying the mulch. After the windbreak is well established, its true beauty and usefulness will be seen, and you may make further use of it by setting in its shelter some favorite flower or shrub too delicate to withstand, unprotected, the rigors of your winters.

DO THEY EAT SNAILS?

In front of my living porch stands a rather prominent white stone. Upon this robin redbreast loves to perch while he devours some tidbit. After his last meal two empty and broken snail shells were left upon it. Scattered on the ground within a few inches of the stone, lay seven other snail shells, all showing signs of having been pecked by a beak. Snails are rare in these parts, and it looks as if the bird had brought them to his dining table. Flower lovers, take note of this bird-help.

Coal is a contrary critter. Instead of expanding generously, like water, in freezing weather, it contracts rapidly. The sensitive coal pile shrinks at the first touch of winter and, with the mercury at zero, when every respectable commodity is frozen stiff, the costly coal pile melts away like Simple Simon's snowball before the fire.

Had Hamlet lived today, he would never have been caught exclaiming: "Thrift, thrift, Horatio!" He would have been shouting: "Thrift stamps, thrift stamps!" along with all other good men and true.

On April 2d all saloons closed in Indiana, and on May 1st Michigan closed all her saloons. Every state added to the honor roll of temperance, is helping, and helping largely, to win the war.

Many families, clubs, communities, etc., have given up the use of wheat for the period of the war. Texas is, so far as we know, the only entire state which has taken this patriotic step.

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The October Judgment Days

By C. A. Langston, Editor "Poultry for Profit" Dept.

OCTOBER days will be judgment days for poultry keepers who maintain flocks for winter eggs. If the pullets do not commence to lay during this month poultry keeping for eggs is bound to turn out unprofitable. A pullet that has just missed laying maturity by the end of this month will probably postpone egg production until next February. As she will consume about 20 pounds of feed, worth five cents a pound, during this dormant period it is not reasonable to expect her to return a profit. If the poultry keeper discovers that his pullet flock is not laying by the first of November he should proceed to find out what is the matter. Maybe the hatching was too late, maybe the feeding was not properly regulated as to quantity and variety; maybe the stock has degenerated on account of in-breeding or cross-breeding. But something is wrong and there should be no let up until the trouble is located.

The Bright Side

The early fall judgment day for poultry keeping, while it exposes faulty methods of poultry keeping and condemns and punishes careless and indifferent poultry keepers, is a day of rejoicing for those who have learned and profited by the lessons of approved poultry experience. Pullet eggs in October are unshakable proof of the correctness of the practices followed in the yard where such pullets range. In every place where this result has been produced a careful review of the season's operations should be made. The hatching dates of such pullets should be recorded, because the hatching dates for winter laying stock are undoubtedly the judgment days of the season's work in the poultry yard. The experience of observing poultry keepers will support this statement. It therefore may be emphatically said that winter failure is just a continuation of spring failure. This department congratulates every poultry keeper who commences to gather pullet eggs in October, and begs the favor of a brief report on method and practice.

Another point worthy of consideration is the determination of earliest date of hatching for winter layers. There is testimony to the danger of hatching too early. In the southern half of the United States pullets hatched in February, and even early March, commenced to lay in early September, but after laying out a clutch of fifteen or twenty eggs go into a mild molt and come back into laying with the hens in February and March. This habit of pullets proclaims the wisdom of caution in early hatching.

Molting Hens

This is season for complaints about the scarcity of eggs. "My hens are not laying," is the common report of this season; "what is the matter with them?" The answer is a very tame one: The hens are molting, and molting hens do not lay. This is an annual event in the poultry yard and the causes are entirely beyond the control of human agencies. As the molting period lasts from 90 to 100 days, during which the hens are totally unproductive, the present high cost of feed raises the question as to whether it is safe to carry hens into the second year. This phase of poultry keeping is also worthy of discussion. The New Jersey College of Agriculture is carrying out an experiment that is designed to test this matter. The pullet pens are carried through the second laying year, but as this test is not yet complete conclusions will have to wait. It is widely believed, however, that Leghorns may be trusted for two and even three years, but there is some doubt about keeping the heavier American breeds—Plymouth Rock, Wyandotte, Rhode Island Red—longer than one year.

If the molting hens are worth keeping they are worth keeping in the proper way. The main things is to provide plenty good feed, give comfortable quarters, and protect them against unnecessary disturbance. Molting hens are very shy and excitable.

Saving at the Spigot and Wasting at the Bung

The price of chicken feed is going to tempt many poultry keepers to hold back both quantity and quality. Beware of this temptation. The workman is worthy

of his hire and the laying hen is worthy of her feed. The most fatal form of wastefulness in poultry keeping is to feed less than is absolutely required to insure production. Fifteen cents' worth of chicken feed per month without getting an egg is wasteful feeding, when thirty cents' worth of feed per month to the same hen might enable her to lay one dozen eggs worth 60 cents. Under the one method, the hen is kept at a monthly loss of 15 cents; under the other, she is kept at a monthly profit of 30 cents.

Help the Hen to Do Her Best

The hen must have help in her work. As natural forage in winter does not afford the various food elements required by the hen in her business of making eggs these elements must be supplied by her keeper. If a suitable ration has not already been worked out, the thing to do is to write to the experiment station for recipes for mixing feeds for a balanced ration. These recipes vary slightly in different stations and for this reason it is usually best to follow the directions of one's own state experiment station.

If correct feeding practices are not used the work of the poultry season will come to nothing.

BIRDS AND THE CODLING MOTH

By Lewis Hillara, Kansas

The general knowledge that birds are insect eaters is well established, but we accept it in such a general way that we never think much about what birds eat insects or what insects they eat. Fruit growers find no pest more destructive to the fruit than the codling moth larvae, yet there are several families of birds ready to help him get rid of them.

In this vicinity I do not believe there is any other so expert or so much on the job as the small black and white-spotted woodpecker with the little red spot on the back of its head. I have seen these little birds searching diligently every inch of the trunk and limbs of a big apple tree that grows in our yard, and woe betide the dormant larva they discover. These birds can work through and under the bark, and they do not need more than a suggestion that a worm lurks under a piece of bark to dig down and find out.

Besides this little woodpecker, all the woodpeckers hunt worms wherever they can find them, though they are not so apt to hunt close to the house as this one. There are several other birds that do work in orchards, and one of these is a little warbler that very closely resembles the little woodpecker but has no red on its head. The warbler family is a numerous one and varies greatly in color, but all are insect-eaters. I have never noticed them especially thick about orchards, though nearly all birds like to hunt among the apple trees.

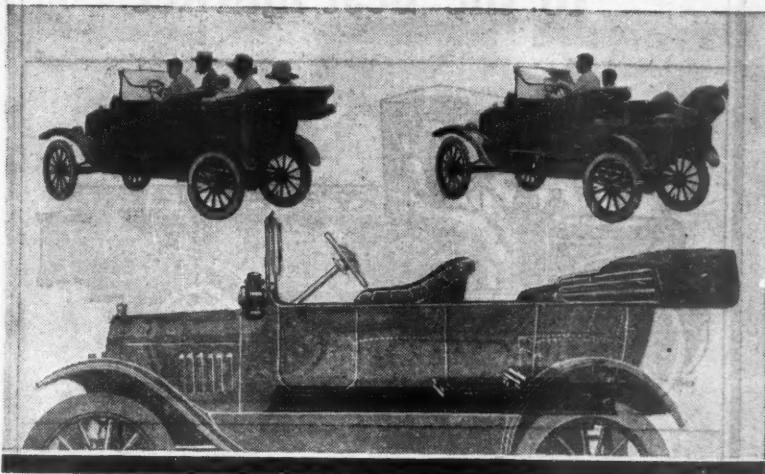
It is the winter birds that do the most good in fighting the codling moth, for it is then that the larvae are most at their mercy. I feel that I am justified in saying that a very large majority of all the codling moths that go into winter quarters are found and destroyed by birds.

In the summer the little larvae of the codling moths are exposed to the attacks of birds for only a very few days before they enter the apple, but it is not probable that many are captured at this time.

WONDERFUL EGG PRODUCER

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs," and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit maker, write R. J. Reeser, poultry expert, 3657 Reeser Bidg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for \$1.00 (prepaid). So confident is Mr. Reeser of the results that a million dollar bank guarantees if you are not absolutely satisfied, your dollar will be returned on request and the "More Eggs" cost you nothing. Send a dollar today or ask Mr. Reeser for his free poultry book that tells the experience of a man who has made a fortune out of poultry.—Adv.

TWO CAR SERVICE at ONE CAR COST



The Heath-DUPLEX patented folding truck body for Ford touring cars will pay for itself quicker than any machinery investment you ever made.

It is attached securely to the chassis. It fits old or new Fords.

The Heath-DUPLEX delivery body stays out of sight under the tonneau, with no outward sign of its truck utility, when the Ford is used as a touring car. The tonneau of the Ford touring car is made removable.

To make it a truck you simply slide off the tonneau and unfold the delivery body. Sixty seconds is all it takes. No tools are necessary.

To return it to a passenger car you fold up the delivery body and slide on tonneau. Another minute accomplishes this change.

Many a farmer will save the price of his Heath-DUPLEX this season by his ability to haul men and supplies in time to salvage a crop from disaster by storm or frost. On the average farm it will pay for itself in a month's use.

The Heath-DUPLEX is a product of the same spirit that moves a farmer to grow twice as many bushels to the acre as he did before the war.

It adds truck use to touring car use at a small cost, utilizing the low cost operation of the Ford for a double purpose.

It is indispensable to the small farmer who can't afford a separate truck. It is equally essential to the big farmer because of its ability to haul the lighter loads at less expense than his heavy truck.

One demonstration of the Heath-DUPLEX will convince you beyond further question as to its utility. Write us for folder explaining clearly the Heath-DUPLEX. We will also tell you where you can get a demonstration.

*Look for a demonstration
of the Heath-DUPLEX
at your state fair.*

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AMERICAN FRUIT GROWER

329 Plymouth Court, Chicago, Ill.



Meet Mrs. Munson—who has two in the Army—and two selling W. S. S.

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J. B. COLT CO., 42nd Street Building, New York

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BEAUTIFYING THE HOME & GROUNDS



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When sent from a reliable nursery, evergreens are always wrapped with burlap around a large ball of earth. This ball should not be broken, as it continues to nourish the tiny feeding mouths of the rootlets, and when they are not torn from contact with the earth, the transplanted tree will be quickly established. With a tree so dug and wrapped by the nursery, it is easy to set it at just the same depth in the ground that it was before, and this is important.

Remember that stable manure will kill an evergreen if it comes in direct contact with the roots, so dig your hole plenty wide and deep, spread several inches of strawy manure in the bottom and then lay a layer of earth over this. The roots will still get the benefit of the fertilization. Place the ball of earth in the center of the hole and water liberally—a pailful is none too much. Fill up the space round the ball with the earth dug from the hole and pack firmly. During the first winter help the transplanted tree by giving it a mulch.

A winter mulch, as you may know, is not meant to keep the frost out, but rather to keep it in and so prevent alternate freezing and thawing and heaving of the earth, with consequent unsettling of the roots. Wait until the earth is well frozen before applying the mulch. After the windbreak is well established, its true beauty and usefulness will be seen, and you may make further use of it by setting in its shelter some favorite flower or shrub too delicate to withstand, unprotected, the rigors of your winters.

DO THEY EAT SNAILS?

In front of my living porch stands a rather prominent white stone. Upon this robin redbreast loves to perch while he devours some tidbit. After his last meal two empty and broken snail shells were left upon it. Scattered on the ground within a few inches of the stone, lay seven other snail shells, all showing signs of having been pecked by a beak. Snails are rare in these parts, and it looks as if the bird had brought them to his dining table. Flower lovers, take note of this bird-help.

Coal is a contrary critter. Instead of expanding generously, like water, in freezing weather, it contracts rapidly. The sensitive coal pile shrinks at the first touch of winter and, with the mercury at zero, when every respectable commodity is frozen stiff, the costly coal pile melts away like Simple Simon's snowball before the fire.

Had Hamlet lived today, he would never have been caught exclaiming: "Thrift, thrift, Horatio!" He would have been shouting: "Thrift stamps, thrift stamps!" along with all other good men and true.

On April 2d all saloons closed in Indiana, and on May 1st Michigan closed all her saloons. Every state added to the honor roll of temperance, is helping, and helping largely, to win the war.

Many families, clubs, communities, etc., have given up the use of wheat for the period of the war. Texas is, so far as we know, the only entire state which has taken this patriotic step.

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The October Judgment Days

By C. A. Langston, Editor "Poultry for Profit" Dept.

OCTOBER days will be judgment days for poultry keepers who maintain flocks for winter eggs. If the pullets do not commence to lay during this month poultry keeping for eggs is bound to turn out unprofitable. A pullet that has just missed laying maturity by the end of this month will probably postpone egg production until next February. As she will consume about 20 pounds of feed, worth five cents a pound, during this dormant period it is not reasonable to expect her to return a profit. If the poultry keeper discovers that his pullet flock is not laying by the first of November he should proceed to find out what is the matter. Maybe the hatching was too late, maybe the feeding was not properly regulated as to quantity and variety; maybe the stock has degenerated on account of in-breeding or cross-breeding. But something is wrong and there should be no let up until the trouble is located.

The Bright Side

The early fall judgment day for poultry keeping, while it exposes faulty methods of poultry keeping and condemns and punishes careless and indifferent poultry keepers, is a day of rejoicing for those who have learned and profited by the lessons of approved poultry experience. Pullet eggs in October are unshakable proof of the correctness of the practices followed in the yard where such pullets range. In every place where this result has been produced a careful review of the season's operations should be made. The hatching dates of such pullets should be recorded, because the hatching dates for winter laying stock are undoubtedly the judgment days of the season's work in the poultry yard. The experience of observing poultry keepers will support this statement. It therefore may be emphatically said that winter failure is just a continuation of spring failure. This department congratulates every poultry keeper who commences to gather pullet eggs in October, and begs the favor of a brief report on method and practice.

Another point worthy of consideration is the determination of earliest date of hatching for winter layers. There is testimony to the danger of hatching too early. In the southern half of the United States pullets hatched in February, and even early March, commenced to lay in early September, but after laying out a clutch of fifteen or twenty eggs go into a mild molt and come back into laying with the hens in February and March. This habit of pullets proclaims the wisdom of caution in early hatching.

Molting Hens

This is season for complaints about the scarcity of eggs. "My hens are not laying," is the common report of this season; "what is the matter with them?" The answer is a very tame one: The hens are molting, and molting hens do not lay. This is an annual event in the poultry yard and the causes are entirely beyond the control of human agencies. As the molting period lasts from 90 to 100 days, during which the hens are totally unproductive, the present high cost of feed raises the question as to whether it is safe to carry hens into the second year. This phase of poultry keeping is also worthy of discussion. The New Jersey College of Agriculture is carrying out an experiment that is designed to test this matter. The pullet pens are carried through the second laying year, but as this test is not yet complete conclusions will have to wait. It is widely believed, however, that Leghorns may be trusted for two and even three years, but there is some doubt about keeping the heavier American breeds—Plymouth Rock, Wyandotte, Rhode Island Red—longer than one year.

If the molting hens are worth keeping they are worth keeping in the proper way. The main things is to provide plenty good feed, give comfortable quarters, and protect them against unnecessary disturbance. Molting hens are very shy and excitable.

Saving at the Spigot and Wasting at the Bung

The price of chicken feed is going to tempt many poultry keepers to hold back both quantity and quality. Beware of this temptation. The workman is worthy

of his hire and the laying hen is worthy of her feed. The most fatal form of wastefulness in poultry keeping is to feed less than is absolutely required to insure production. Fifteen cents' worth of chicken feed per month without getting an egg is wasteful feeding, when thirty cents' worth of feed per month to the same hen might enable her to lay one dozen eggs worth 60 cents. Under the one method, the hen is kept at a monthly loss of 15 cents; under the other, she is kept at a monthly profit of 30 cents.

Help the Hen to Do Her Best

The hen must have help in her work. As natural forage in winter does not afford the various food elements required by the hen in her business of making eggs these elements must be supplied by her keeper. If a suitable ration has not already been worked out, the thing to do is to write to the experiment station for recipes for mixing feeds for a balanced ration. These recipes vary slightly in different stations and for this reason it is usually best to follow the directions of one's own state experiment station.

If correct feeding practices are not used the work of the poultry season will come to nothing.

BIRDS AND THE CODLING MOTH

By Lewis Hillara, Kansas

The general knowledge that birds are insect eaters is well established, but we accept it in such a general way that we never think much about what birds eat insects or what insects they eat. Fruit growers find no pest more destructive to the fruit than the codling moth larvae, yet there are several families of birds ready to help him get rid of them.

In this vicinity I do not believe there is any other so expert or so much on the job as the small black and white-spotted wood-pecker with the little red spot on the back of its head. I have seen these little birds searching diligently every inch of the trunk and limbs of a big apple tree that grows in our yard, and woe betide the dormant larva they discover. These birds can work through and under the bark, and they do not need more than a suggestion that a worm lurks under a piece of bark to dig down and find out.

Besides this little woodpecker, all the woodpeckers hunt worms wherever they can find them, though they are not so apt to hunt close to the house as this one. There are several other birds that do work in orchards, and one of these is a little warbler that very closely resembles the little woodpecker but has no red on its head. The warbler family is a numerous one and varies greatly in color, but all are insect-eaters. I have never noticed them especially thick about orchards, though nearly all birds like to hunt among the apple trees.

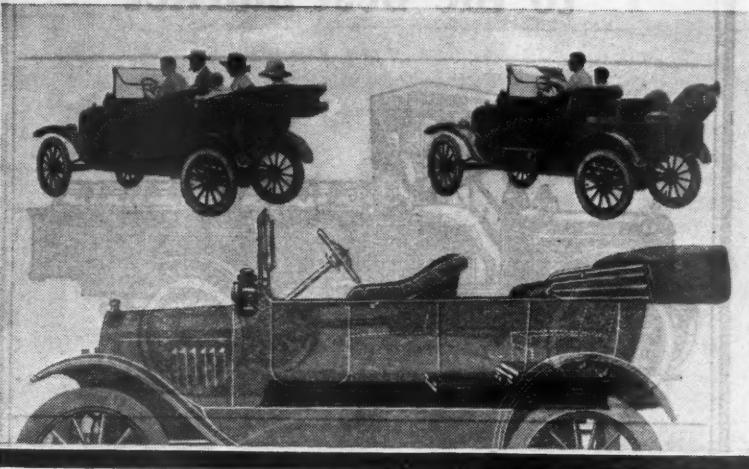
It is the winter birds that do the most good in fighting the codling moth, for it is then that the larvae are most at their mercy. I feel that I am justified in saying that a very large majority of all the codling moths that go into winter quarters are found and destroyed by birds.

In the summer the little larvae of the codling moths are exposed to the attacks of birds for only a very few days before they enter the apple, but it is not probable that many are captured at this time.

WONDERFUL EGG PRODUCER

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs," and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit maker, write E. J. Reefer, poultry expert, 3657 Reefer Bldg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for \$1.00 (prepaid). So confident is Mr. Reefer of the results that a million dollar bank guarantees if you are not absolutely satisfied, your dollar will be returned on request and the "More Eggs" cost you nothing. Send a dollar today or ask Mr. Reefer for his free poultry book that tells the experience of a man who has made a fortune out of poultry.—Adv.

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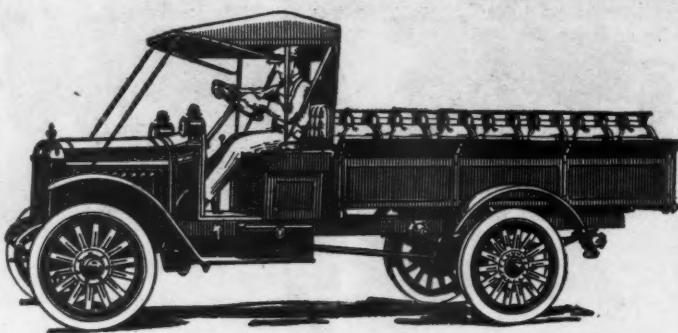
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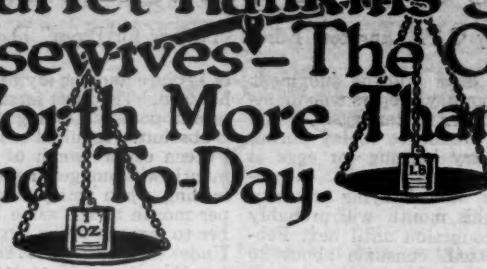
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W. Barret Hankins Says— Housewives—The Ounce Is Worth More Than The Pound To-Day.



IN TIMES that are unusual the "wise saws" that once guided us must be revised, reinterpreted. Changing events bring new meanings to the adages, the essence of which are eternal truths.

Today we are at war. If once "a stitch in time saved nine" now it saves nineteen. With the world turned topsy-turvy by a man mad for material power, the scales which normally balanced according to universal laws, now appear to be operated under opposite principles.

Once we were satisfied with an ounce of prevention being worth a pound of cure. Today an ounce of prevention is worth many pounds of cure.

Today we must save, we must economize, we must be thrifty.

The easiest way to accomplish these three ideal purposes is to reserve our thought motion—to prevent. To save by preventing waste; to economize by preventing extravagance; to be thrifty by preventing useless expense.

It is not always easy to save, not always easy to economize, not always easy to be thrifty, but it is a very easy matter to prevent waste, extravagance and useless expense.

Let's take the matter of time. Time is a very vital factor. It is a very valuable thing. Our government, ever-watchful of our interests, regulated the clocks for us so that we might escape the results of time wasted.

"How can I," you ask yourself, "save time when all the time that I have is occupied?" There you are, you are confronted with an unsolvable problem. Do as you will, you cannot find a means to save time.

Now then, let's forget to try to save time, and begin to prevent a waste of it.

"How is time wasted?" is a question that is asked over and over again. There is one answer only to this. Time spent in unnecessary occupation is time wasted. Some people have the very absurd idea that rest is time wasted. The hours spent in rest are often hours in which we store up enough renewed energy, enough renewed vitality, and possibly the addition of a new vision of life, and a new hope, a new ambition and a new determination, that make the few hours of rest taken worth years of work.

Housewives, eliminate your unnecessary work.

"How am I to determine the unnecessary work that I do," is another question asked repeatedly.

The unnecessary work that you do is the work that could be done without you. Take churning for instance. What can one accomplish sitting beside a churn, working a dasher up and down? When power churning was invented they did not come in merely as a great invention for making butter, but came in as a great invention to prevent a waste of time.

Consider the vacuum cleaner as another instance. One could not begin to estimate in dollars and cents the results that the vacuum cleaner has accomplished, because the things that it has aided in preventing would reach out into too many different directions and would total up to too great a sum.

The vacuum cleaner has prevented disease. It has saved the health by preventing ill-health. The vacuum cleaner takes out of carpets and rugs, draperies and upholstery, the disease-breeding germ. It prevents that germ from living and multiplying. It keeps that dust germ from reaching the system of yourself and the members of your household. In that one thing alone it has saved thousands of dollars. It has prevented the waste of time because it accomplishes its results in much less time than is possible by old methods. It has prevented wear and tear on carpets and rugs, and hence has prevented a waste of wool. This is significant in the light of the report of the quarter-

master's department which shows an extraordinary demand for 766,000,000 pounds of wool with 17,500,000 pounds additional for semi-government use. Part of the products must be imported from other countries.

With each housewife contributing her bit, by shearing waste as surely as by shearing sheep, the energies and time of the quartermaster's department can be turned to more effective channels. The clothing needs of our soldiers can be cared for to a greater degree.

Have you stopped to think of what every waste means in the drain made upon man power and materials? The broken fruit jar—wasted. Have you thought what that implies? It does not mean just another fruit jar. It means the labor, the time, the effort, the energy, the man power, the raw material that enters into the making of another fruit jar, from the very beginning of the process of manufacture of that jar until it finally reaches your hands. To take the precaution to prevent the breaking of one fruit jar saves in more ways than one can think of.

Have you thought how the employment of the many modern labor-saving cooking devices prevents a waste of time in cooking? Not only prevent a waste of your time but a waste of raw materials in the food products cooked, and further still prevent a waste of strength and health by preventing the escape of the food essentials in the cooked food. Cooking devices that prevent a shrinkage of the food weight save the food costs.

Likewise do you, through using such a device, prevent a needless use of the fuel, vital to victory. Only by careful husbanding of our fuel supply, we are told by the Fuel Administrator, will the millions of tons of coal mined be sufficient to run our war industries and furnish heat for our homes. The making of munitions is directly dependent on the iron and steel produced through smelting of ores. But the blast furnace cannot exist without fuel, so every calorie of heat saved through using fuel-saving cooking apparatus, speeds a bullet on its way to cripple autocracy.

Just as truly the possession of these bullets and other weapons, increases the life chances of our soldiers, strengthening the man power that is already turning the tide of military events in our favor.

Along similar lines, the washing machine that helps to diminish the wear and tear on the housewife's muscles, is in reality removing strain from the sinews of the nation.

Waste of soap fat is eliminated. "Fats are fuel for fighters" is one of the well-founded slogans that has kept us in the paths of patriotism. In some of the countries of the enemy, soap of any kind is a luxury, in many cases taboo. Preventing such conditions in our own country is a patriotic privilege and opportunity of the housewife. But she is building even better than she realizes, by preventing premature wearing-out of clothes. The conservation of materials due to scientific methods of washing, produces cotton for the manufacture of bombs to destroy a fearful foe.

Some day, and not far distant, the glad tidings of peace are going to ring throughout the world. We must prepare for peace, prepared to share in its glorious blessings, prepared to aid in its advancement. We can be ready by beginning now to prevent any hindrance to the accomplishment of the great ends sought.

Peace is going to bring a great demand in individual effort, individual co-operation. We are learning more forcibly now than ever before that the future depends upon the present. Our accomplishments tomorrow are the result of the foundation we lay today. Time is going to be even more valuable than it ever was before. We must have time for planning, time for thinking, time for more work along constructive lines. Our children and our home



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are going to demand more of our attention, because we are learning that our children are the greatest national asset, and that our home is the Nation. We are going to put more value upon the education and the morals of your children. Our war has laid bare before us the waste that has been the result of a lack of preventing the spread of immoral deeds. To have a truly strong and great nation, we must have a moral manhood and womanhood. We cannot enforce morals, but we can prevent immoral conditions. We must have time for educational work along these lines. A citizenry capable, energetic, motivated by ideals, reconstructing the world, replacing its dumping grounds with parks, its prisons with schools, its hovels with homes—such will result from the home-maker's application of the "Waste Prevention Principles."

The housewife will find that she is engaged in the greatest occupation that could be offered. She presides over the aim and method of the most valued things that we have—the home influence, and it will require all the time, all the thought and all the energy that the housewife can command to execute the duties of this great institution.

Housewives, I appeal to you to take stock of conditions, and to begin today to prevent the continual grinding that keeps you from rising to the position you should occupy. Think of it! there is something that prevents you from doing the things that are most vital to the good of your household and yourself, and it is the obstacle to accomplishing these things that you must remove.

The way is made clear. One does not have to, so to speak, stand alone and cry in the wilderness of helplessness. There is a means provided by which the great and noble work over which you are master can be done in such a way that it does not master you.

In my early talks with you I furnished you a foundation on which to work. I gave you suggestions for charting your time. I am supplying you regularly through the AMERICAN FRUIT GROWER with information about Modern-Mechanico household devices—ways and means of putting your home on a more efficient basis, methods of conducting your home on a business basis. I am glad to say to you that the readers of the AMERICAN FRUIT GROWER have responded. In one month more than 300 readers wrote me for information about the devices listed by me as being worthy of consideration by housewives who read the AMERICAN FRUIT GROWER. Look through the back numbers of the AMERICAN FRUIT GROWER and see listed there some of the articles that if brought into your homes would help you prevent waste—extravagance.

I know this, that the American housewife stands firmly for thrift, conservation, economy. In this great crisis she has proved it. Uncle Sam has not found a more willing co-operator, a more earnest worker, a more sincere helper, a truer Ally than the American housewife, and in turning to her, believing that she would measure up to the ideal held of her, her country has indicated woman's place, has shown it to be even a greater place than she herself would create. In this war our nation has acknowledged woman in a more glorified way than has ever before been expressed. Woman's influence, woman's co-operation, when this war is ended will be more needed, more sought for than it ever has been in the history of the world. You are preparing for the new call; you have prepared for it, but I urge you—prepare for it in even a greater way.

NOTE.—The trade names of manufacturers of articles approved in these columns are not printed herein, but same can be obtained by writing directly to W. Barret Hankins, care of AMERICAN FRUIT GROWER, 329 Plymouth Court, Chicago, Ill., and enclosing a 3-cent stamp for reply. Interested readers should write to Mr. Hankins for the name and manufacturer's address of approved appliances, and upon receipt of the desired information communicate directly with manufacturer for catalogs, prices, etc. We have no connection whatever or interest in any manufacturer.

Save seed from your favorite vegetables this fall. It may be difficult to get them next spring and there is always danger of delay in shipment, which would be avoided if you had your own on hand. Be sure that the seed is well developed and thoroughly dry. Store in a dry place with, if possible, only moderate variation of temperature. Glass jars make fine receptacles for seed.



The Engine Selected by over 150,000 Farmers



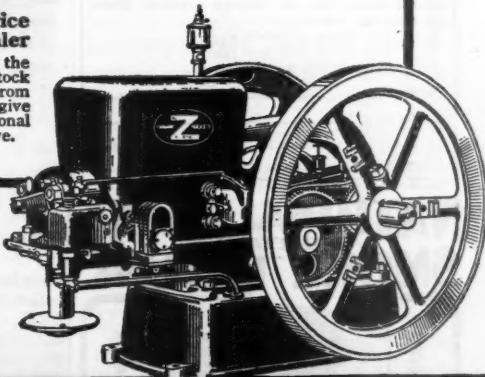
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American Fruit Grower

tom as well as on top. A bee-shed for wintering should always face the south.

The entrances of all outdoor-wintered colonies should be contracted down to a small opening. The summer entrances should have a cleat through which are bored four or five $\frac{1}{8}$ -inch holes, that is to say, the entrances should be reduced to five such holes. During the coldest part of the winter the entrance may be contracted to one hole providing there is bottom packing. But unless the hives are packed on all six sides, it is better to have not less than three holes; and occasionally during midwinter it will be advisable to pull out the large cleat closing the summer entrance, and rake out any dead bees that may have accumulated on the bottoms of the hives. Care should be taken in doing this not to jar the hive nor excite the bees.

To recapitulate, during midwinter bees require little or no attention. In the case of the outdoor bees, unless they are well packed it will be necessary to examine the entrances to see that they are not closed with ice or dead bees. Where bees are wintered in cellars, attention should be paid to the matter of temperature, and if the temperature goes up past 50, bees will require ventilation. When bees are uneasy, flying around on the cellar bottom in large numbers, it may be assumed that the temperature is too low, below 40, or too high, above 55, with insufficient ventilation. Bees will stand a high temperature provided they have plenty of air.

Inexperienced Man Asks Advice

I have recently bought a seven-acre farm which I intend to devote largely to fruit. There is on the farm a neglected orchard. Some of the trees were girdled by mice and rabbits. Can I revive those that are alive? I have no confidence in my ability to select livestock. Can I raise enough feed on this land to keep a suitable number of cows, pigs, etc.?

C. A. Green's reply: Sometimes it pays to save the old neglected fruit trees by cultivating the soil, by pruning and spraying, but if there are many dead branches it may be best to dig them out and plant a new orchard. It is not likely that the varieties of the fruit trees are desirable. You could not expect to keep much livestock on seven acres if it is devoted largely to fruit. A horse and cow, a few pigs and chickens are about all you could feed from the product of your seven acres, a large part of which is devoted to fruit. In buying livestock an inexperienced person should not rely upon his own judgment, but should secure the opinion of some neighbor or friend who has experience.

Low clayey soil is best adapted to hay. It will be necessary to plow it occasionally and sow thereon rye or wheat in order to reseed it, as meadow land runs out after three or four years, giving lighter yields. The higher and more sandy soil should be devoted to fruits and particularly the small fruits, which on the whole are more profitable than large fruits, but the small

Bee Keeping for Profit



By E. R. Root, Editor of "Gleanings in Bee Culture"

IN THE September number we gave particulars on fall preparation, how to feed, and, very briefly, how to winter indoors and outdoors. In this issue we shall concern ourselves with some specific details. We will assume that the average fruit grower does not have more than a dozen colonies. Those who have fifty or a hundred acres of fruit should have not less than a colony to the acre. In such a case a larger provision should be made for wintering.

The average fruit grower will have or should have a good frost-proof cellar to keep his fruit. Any cellar that is a good place to keep vegetables is a good place also

house cellar he will be compelled to winter outdoors. Colonies left out should be covered over with some sort of packing kept dry from the weather. Where the hives are all in a row they can be covered with loose straw except the front. The more straw that can be piled on them the better. The top layer of the straw should be thatched so as to shed the water. To keep it from being blown away it should be held down by two rails laid lengthwise. When hives are packed in this way the straw underneath should be kept dry.

Light, fluffy snow, three or four feet deep, in cold climates, is generally a great benefit in protecting the bees from cold.

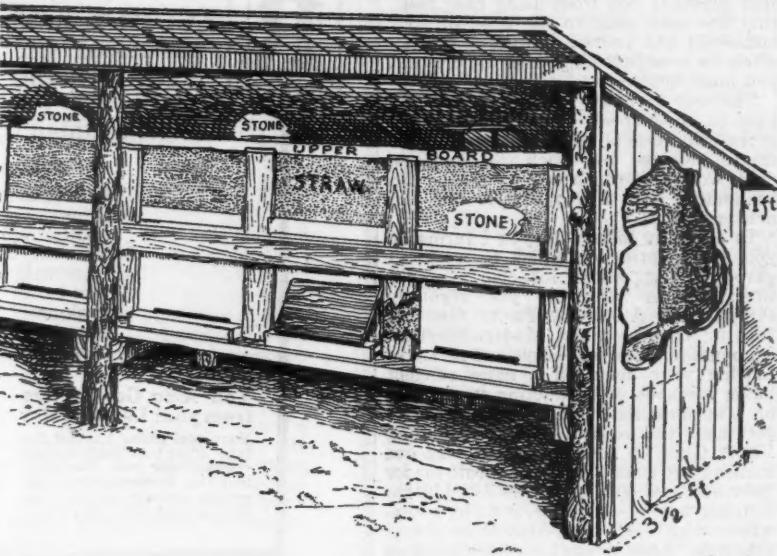


Fig. 1. Wintering under a shed. Bees are very often wintered in rows under a shed with the south side open. Straw is packed all around the hives, in between them, on top, and under them. The purpose of the shed is to keep the packing dry and to prevent wind from the north and west from striking the hive direct.

to winter bees. The temperature of the cellar should not go below 40 nor above 47 F. One that goes below freezing is bad both for vegetables and for bees. One that goes above 50 or 55 is hard on vegetables and fruit and equally poor for the bees unless there is a large amount of ventilation. An ordinary house cellar partitioned off from the room that contains the furnace makes a good place for wintering a few colonies of bees provided it is made perfectly dark by putting blinds or screens over the outside windows if there be any. In such a cellar, if the temperature can be maintained between 40 and 47, a few colonies of bees winter nicely. If there is a larger number than 15 or 25, and the temperature goes up to 50, it will be necessary to provide ventilation; and this usually can be accomplished very easily by leaving the door leading into the furnace room slightly ajar. While this lets in a little light it usually does no harm; but a sharp pencil of light through a crack leading from outdoors will excite bees more or less.

An ordinary good root cellar independent of any dwelling, located in a sidehill, providing it has an embankment of three or four feet of earth over the top of it, with a roof to keep the dirt dry, makes an ideal place for wintering bees. Some fruit growers have some very large fruit cellars of this style. If so, they could not have a better place for wintering bees; and the larger the cellar the better, providing the temperature does not go below 40 degrees. The temperature of Mother Earth is along about 45 degrees, and when the cellar is located wholly underground it makes an ideal place for keeping fruit, vegetables, etc., as well as bees, because it will maintain a temperature of 45—a temperature that is just right for bees.

Where one does not have a frost-proof

But in climates where the temperature rises above freezing several times during the winter, the snow sometimes does more harm than good by melting over the entrance and then freezing, thus sealing it hermetically. This is almost sure to kill the bees.

Some beekeepers place their hives in



Fig. 2. A sidehill makes an ideal place for a bee cellar. The usual plan is to dig out a trench on the side of the hill, roof it over, pack the loose dirt around the sides and ends and front. A wooden barricade is needed in front to hold the dirt. Under the roof should be placed two or three feet of sand. It is always desirable to have the roof project over the side of the embankment to keep the dirt dry and frost-proof. In this the cellar shown is defective.

sheds, as shown in Fig. 1. The hives are placed close together, the spaces between them being filled with straw as well as on top. Late developments show that it is desirable to pack the hives under the bot-

fruits require more experience and care in management. It is surprising to contemplate how many things a man should know in order to be a successful farmer and fruit grower.

Continued from page 3

Turning cranks for washing machines, churning, grindstones—milking the cows—pumping the water—these are the homely tasks that electricity can now be called on to do, quickly, efficiently, at a little expense. For an electric motor will run the old, crank-operated machines, run the milking machine and let it do the hard work of milking, in half the time of hand milking. A modern bathroom, running water at a sink in the kitchen, running water for the stock troughs without hand pumping, water under pressure for sprinkling and fire protection, these are the things that may now be used on the modern farm, where an electric plant is part of the equipment.

A Small Example

Just recently the writer talked with a farmer who last spring had some corn stored in a dark basement, corn which would germinate and which was greatly needed in the neighborhood for seed. It was necessary that it be sorted and moved quickly. Happily he had an electric light plant on his premises. He strung lights into the dark basement, the neighbors jumped in and helped him and the seed-corn problem for that community was solved.

Cheaper Than City Power

It is an intensely practical thing, this idea of an electric plant for the farm. A well-designed plant will furnish electricity at a lower cost than the city power station will charge and farmers who are using these plants testify that they are saving as much as twenty-five hours a week for work such as above indicated. Their neighbors are observing these results and one by one, in many farm communities, they are enlisting this new farm force in their own behalf.

To those who are observing these things, then, it seems that we are now witnessing the dawn of an electrical age on the farm. It has been a little slow in materializing, perhaps, but it is coming surely and its coming heralds an era of comfort, convenience and of material benefit that, only a few years ago, would have seemed to be altogether improbable and away beyond the bounds of the average imagination.

BEFORE WINTER COMES

November is your last month for seeing that the country roads over which you and your family travel are in fair condition to stand up under the stress of winter weather.

You know that it is not the winter rains that hurt the roads—if they are well drained the skies may open and pour water on them for many hours without damage—but let that water settle in ruts and holes, and freeze and thaw and freeze again, and your road is as good (or as bad) as ruined, until you can get out next spring to work it.

Why not drag the dirt road now and insure a passable way for you to get about this winter? It's bad enough for a man to have to plod through mud, it's tough on horses to have to pull through it, but when it comes to women and children it's almost impossible. You don't want to make prisoners of your family this winter. Well, then—you know what to do. Get out and drag that road. Do it now.

BREWERS LACK SENSE OF HUMOR

The jolly brewer, whatever his shortcomings, has never been suspected until now of such lack of a sense of humor as is shown in the argument that prohibition would be a cruel measure because it would throw out of employment 100,000 persons now directly engaged in the production and distribution of alcoholic beverages. In these days of labor shortage, to be thrown out of one employment is to be snapped up by another. An esteemed contemporary (*Successful Farming*) makes the obvious suggestion that these pitiful unemployed might well turn their attention to productive labor—always providing that they cannot do the one best thing, which is to don the khaki and fight for their country.

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All subscriptions of the *AMERICAN FRUIT GROWER* are stopped promptly on date of expiration, which is printed on address label of your magazine. Be up to date. Renew for three years for \$1.00; or one year for 50 cents.

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Dear Sir:	We beg to report the following performance of a Moline Universal tractor 9-18 H.P. Serial No. 19002 Motor No. 10002 under test for draw bar horse power.	
Conditions:	Soil: Stubble ground—loose on top firm underneath.	
Load:	Plow, two fourteen inch plows.	
Dynamometer:	Hyatt Recording.	
Draw Bar Pull:	Average for one minute in maximum.	
Time:	Recorded by dynamometer.	
Hitch:	Horizontal centered.	
TEST : GEAR : DRAW : SPEED MILES : DRAW BAR : HP. NO. : : RATIO : PER HOUR : HORSE POWER; MARKS.		
2A : FULL : 21354 : 2.18 : 12.5 : Average c		
2B : : 21354 : 3.52 : 20.05 : plowing maximum		
DRIVERS:	<i>G. H. Woolley Jr.</i> <i>L. S. Newman</i> <i>J. B. Davidson</i>	<i>George S. Rogers</i> <i>W. A. K. Hall</i> <i>G. E. Hildebrand</i>
ENGINEERS IN CHARGE:		
MANAGER OF DEMONSTRATION:		

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TEST : GEAR : DRAW : SPEED MILES : DRAW BAR : HP.
NO. : : RATIO : PER HOUR : HORSE POWER; MARKS.

2A : FULL : 21354 : 2.18 : 12.5 : Average c

2B : : 21354 : 3.52 : 20.05 : plowing
maximum

DRIVERS:
G. H. Woolley Jr.
L. S. Newman
J. B. Davidson

George S. Rogers
W. A. K. Hall
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ENGINEERS IN CHARGE:
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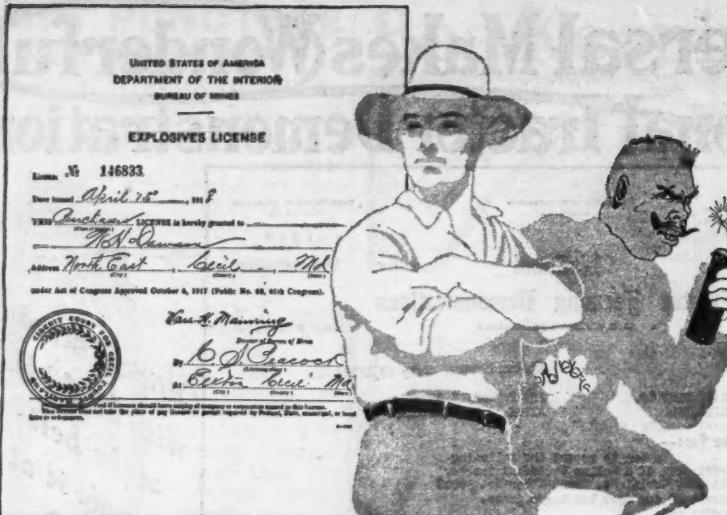
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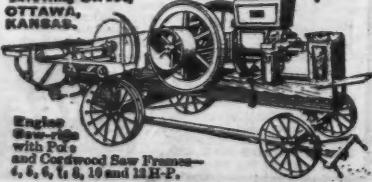
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October in the Orchard

By A. S. Colby, Editor of "Diseases of Fruits and Trees" Department

OCTOBER is a busy month for many fruit growers chiefly having to do with harvesting and disposing of the crop. With that safely out of the way, however, there are several timely tasks to which the up-to-date orchardist may apply himself.

A word about orchard sanitation may not come amiss at this time. Orchard sanitation is an extremely important factor in successful fruit growing. The term is meant to include the intelligent use of such practices as proper pruning in removal and disposal of broken or diseased branches, scraping dead bark from trunk and lower branches, fall plowing in many instances as well as spraying; in a word, doing everything to keep the orchard clean, thus aiding the trees as well as the owner to more easily control the numerous fruit troubles now common.

It has been said that pruning was unnatural. Nature prunes. Witness the dying branches in the center of an old apple tree in the pasture. We believe that by the use of intelligent care we can prune to shape the head of the tree and admit light and air in sufficient quantity to make disease control easier. Ideal conditions for fungous growth such as moisture and shade exist in the dense center of an old neglected tree. If we have in addition a diseased branch on the tree spores are found there and spread from the cankered area over the, as yet, healthy leaves and branches.

These spores germinating under favorable conditions bring about the disease over a wide area, gradually from year to year killing more of the branches till the whole tree is diseased, the trunk rots and a strong wind blows the tree down.

Many apple trees throughout the country from 15 to 50 years old have begun to go back, due to several causes, chief of which is the above. Spraying must in most cases be carried on; the last decade has seen the introduction of many serious diseases which can be controlled in no other way.

Again it is an inexorable law of Nature that the weak must lose out in the struggle for existence. Trees impoverished by lack of plant food or moisture, injured from bruising by farm implements or by gnawing animals, from severity of winter, sun scald, etc., are more easily preyed upon by injurious insects and diseases, all contributing to the final death of the tree. Keeping the orchard clean, with proper amounts of plant food available, pruning and spraying are more than insurance; they prevent loss, not reimburse for it. What then shall be the program of the orchardist anxious to do his best by his trees that they may do their best by him? First make a careful survey of the orchard, noting especially the variety, age and condition of each tree. It may pay to renovate even with the expense it involves if the trees are not yet past responding to such treatment. If the varieties are not worth while the trees should be removed or top-grafted to desirable varieties.

The age at which trees are in the prime varies with the variety and the locality. In Illinois, for example, a tree is bearing its best crops before it is 30 years of age, while many New England trees have not reached full development for years after that.

The condition of the trees is to a great extent the determining factor. It will not pay to bother with a tree on whose main branches may be seen white toadstool-like growths. Their presence indicates that the branch is already badly diseased and it will be only a few years before the branch will fall to the ground. The unfortunate part is, however, that where one main branch is thus affected, in all probability others and even the trunk will be similarly diseased. The spread of the fungus is comparatively slow but undeniably sure.

How could this have been prevented? By careful pruning and spraying, both at the proper times of year. Pruning may include the cutting out of weak, crossing, broken and diseased branches, having for its object the keeping of the center of the tree open as well as facilitating spraying and harvesting. Many a crossing branch is the forerunner of a serious canker resulting from disease spores gaining an entrance where two branches bruised each other in their crossed position.

It cannot be too strongly emphasized also that in pruning a tree when cutting off a branch, to always make the cut close to and parallel with the branch or trunk remaining. Leave no stubs. It is absolutely impossible for the wound to heal over, that is for the green growing cambium tissue to roll over the cut surface unless the cut is made as above directed. Most of the trees, including shade trees, and those on streets, with rotten hearts, hollow trees, have resulted from carelessness and ignorance in leaving stubs. It is a slow process, this rotting of the heart. Years elapse between the time when the stub was left unprotected and death of the tree. Nevertheless, the tree will decay if wounds are not healed over and everything possible must be done to aid the tree in this process.

To this end, pruning should be done where large branches are removed just before growth in spring, making a smooth cut to facilitate the easy rolling of the cambium tissue over the wound. After the cut has been made leave the wound exposed for a few weeks till the cambium begins to grow out from all around the circumference. Then apply a good linseed oil paint to the cut surface. Mix raw linseed oil and white lead, coloring it with lampblack. It should not be many months before a healthy tree will have hermetically sealed up the wound. If, however, disease spores have started to grow into the exposed wood, even if the cambium should heal over the wound, decay would go on. By all means, however, cut out any diseased branch as soon as noticed. Do not wait till spring. Black knot on plums and cherries furnishes a case in point. Painting the wound is seldom necessary here as the branches are smaller.

The disease, however, is one of the worst on the stone fruits and must be fought consistently. Cut down wild cherries in the neighborhood. In cutting out the black knot, the branch must be sawed off some distance back of the appearance of the disease since the fungus works concealed in the wood some time before appearing on the surface.

The next question is that of spraying in the fall. This will be discussed in the November issue of the AMERICAN FRUIT GROWER.

BULLETINS WORTH READING

The following Bulletins can be secured free by writing to the addresses given:

Price-Fixing and the Cost of Farm Products, Bulletin 292, Agricultural Experiment Station, University of Wisconsin, Madison, Wis.

Diseases and Insect Pests of the Pecan, Bulletin 147, Experiment Station, Gainesville, Fla.

Pecan Growing in Georgia, Bulletin 132, Georgia State College of Agriculture, Athens, Ga.

Rodent Pests of the Farm, Farmers' Bulletin 932, United States Department of Agriculture, Washington, D. C.

Suitable Storage Conditions for Certain Perishable Food Products, Bulletin 729, United States Department of Agriculture, Washington, D. C.

War-Time Suggestions for Home Economics Exhibits at County or Community Fairs, Extension Circular 25, College of Agriculture, University of Illinois, Urbana, Ill.

Marketing Butter and Cheese by Parcel Post, Farmers' Bulletin 930, United States Department of Agriculture, Washington, D. C.

Common Diseases of Berries, Circular 88, Agricultural Experiment Stations, New Brunswick, N. J.

The Strawberry Weevil, Bulletin 324, Agricultural Experiment Stations, New Brunswick, N. J.

The Bean Weevils, Circular 91, Agricultural Experiment Stations, New Brunswick, N. J.

The Chicken Tick, Bulletin 118, Agricultural Experiment Station, Sillwater, Okla.

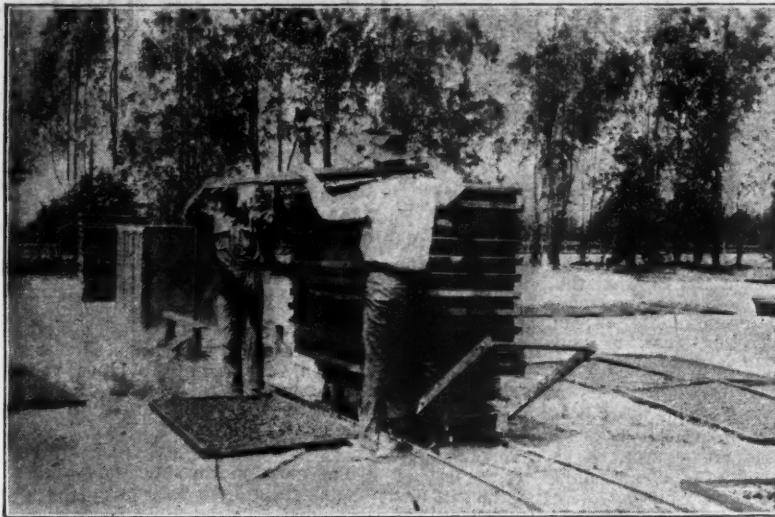
Common Diseases of Garden Vegetables and Truck Crops, Agricultural Experiment Stations, New Brunswick, N. J.

California Apricot Industry

By Albert Marple, California

"UNCLE HOOVER" has a valuable ally in the apricot industry of California. A vast acreage of new trees is coming into bearing this year and from all appearances our "cot" crop promises to be a bumper. The harvesting of the cot crop is interesting. For the most part the work is done by city people who go out into the country especially for this purpose. Before their arrival the farmer prepares to receive them, putting up tents or wooden houses, which are equipped with

After being filled, the trays of fruit are stacked upon iron-wheeled trucks, the tracks for which run along the center of the house. When full the trucks are drawn to the sulphuring sheds, which are located conveniently to the pitting houses. These houses are made both single and double—that is, to hold one or two trays. After the stack of trays has been deposited in the sulphuring shed and the truck removed, the sulphur pan, containing five pounds of sulphur for the single house and eight



Apricot Industry "Backs Up" Hoover

beds, tables, chairs, stoves, etc. The harvesting season lasts from four to eight weeks.

There are three steps to this harvesting work—picking, pitting and drying, which includes sulphuring and yard-work. Boys and men do the picking, women do the pitting, while men and large boys do the shed and yard-work. To handle 60 acres the farmer needs a crew of about 45 people—10 pickers, 25 pitters and 10 yard-men.

How the Work is Done

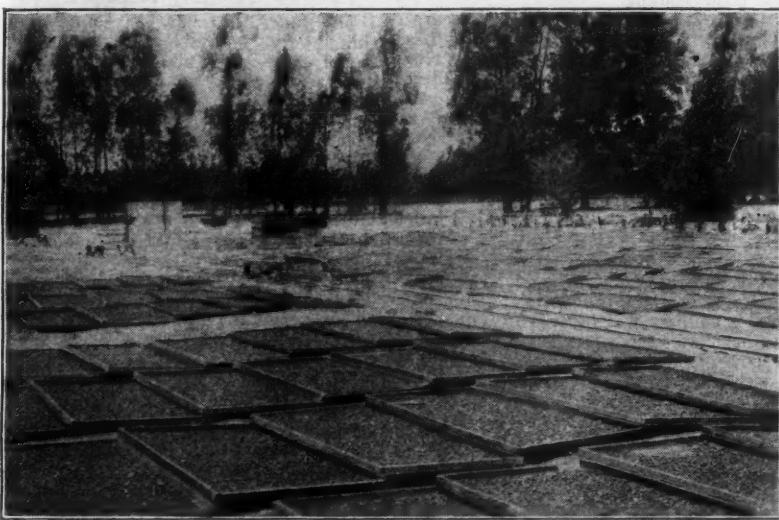
The first step of this work is called knocking, and consists of knocking the ripe fruit from the trees with poles, permitting the green fruit to remain on the trees. After the knockers come the pickers, who gather the fruit in buckets and place it later in boxes holding from 50 to 60 pounds of fruit. These boxes are arranged along

pounds for the double shed, is placed beneath the stack of trays and the sulphur is lighted, after which the shed door is closed and sealed.

Part Played by Sulphuring

This sulphuring is an important part of the work. In the first place the burning of the sulphur kills all possible germs that may have collected on the fruit, and keeps insects from the fruit during and after drying, while it also enhances the keeping quality of the cots. It preserves the color during the drying process, and it assists in the retention of the sugar in the fruit during the evaporating process.

For twelve hours the fruit is kept in the sulphuring shed, after which the houses are opened and the cots taken out in a condition ready for drying. When the fruit comes too fast to be taken care of in the



Apricot Industry "Backs Up" Hoover

the rows that are being picked and are later taken to the pitting sheds.

The pitting tables are located in rows, one along either side of the shed. Sometimes the pitters work single, sometimes double. The trays upon which the fruit is dried are 3x6 feet in size. The work of pitting consists of slipping the seed, by the aid of a sharp knife, from the cot into a pan, after which the halves of the cot are placed, open side up, side by side upon the tray. One box of green fruit covers a tray and a half after the cots have been pitted. For pitting this year the girls received 15 cents a box.

regular sulphuring sheds, emergency houses, such as shown in Figure 4, are used. These are light in weight and easily moved. The trays are stacked and the sulphur is lighted, after which the emergency house is placed over the entire affair, the bottom being sealed with earth.

Drying Field is Tracked

To facilitate distribution of the fruit, iron tracks are run to different parts of the field. After being placed on the truck, following the sulphuring, the stack of trays is drawn to the desired section, where one by

Continued on page 18



CARBIDE GAS lights this farmer's home (and barns) and cooks his meals—safely, quickly, economically.

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Price 25c pair



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NOVEMBER 4-8, 1918

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For Information Address:

WESLEY GREEN, Sec'y Iowa Horticultural Society, Des Moines, Iowa.
W. G. RICH, Chairman of Fruit Exhibits, Council Bluffs, Iowa.
F. J. WRIGHT, Chairman Commercial Exhibits, Des Moines, Iowa.

Kindly Mention American Fruit Grower when writing to Advertisers



Will Plants, Vines and Trees Continue to Advance in Price?

Manure an Important Subject

NURSERYMEN lost money heavily during the Civil War in this country, and many of them were compelled to go out of business. At the close of the Civil War the prices of plants, vines and trees greatly increased. I am told that apple, pear, plum, cherry and peach trees advanced in price at this period to about \$1.00 each.

No one can tell now how seriously the nursery business may be affected by the present war or what the prices will be at the close of the present war, which at this date seems not far off, but there are certain conditions that are fundamental and can be understood at a glance.

Seedlings from France

The seedlings, that is the little trees grown most largely in France, in ordinary times are imported to this country in large amounts. These seedlings are the base of the nursery business. During the past few years the French, being actively engaged in war, have not been able to grow these seedlings as heretofore, therefore the supply has been so largely reduced that American nurserymen cannot hope to receive a full supply.

Further than this, the shipment of these seedlings from France of late has been precarious and uncertain, therefore American nurserymen have no assurance that they will continue to receive from France these important products, without which the nursery business in this country cannot be conducted as successfully as in the past.

Failure in Budding

Here is a peculiar circumstance: Nurserymen propagate trees most largely by budding. The buds after being inserted in the seedling stocks have of late years been tied and held firmly in place by a product known as raffia, a silky, ribbon-like substance, which holds the bud firmly in place until it has obtained a foothold in the little seedling.

Of late it has been impossible to secure a supply of this raffia, which has in past years been imported from Europe. Nurserymen have been obliged to use substitutes. In many instances these substitutes have failed utterly to protect the inserted bud. As a result the budding of many nurseries has been an absolute failure, not only causing nurserymen serious losses but diminishing the supply of fruit trees.

Higher Prices Coming

Herein is indicated what certainly cannot be denied, that there is good reason for assuming that the production of fruit trees in this country will be greatly reduced in the next few years.

There is still another reason for higher prices. The winter of 1917-18 was one of the most severe ever known, causing the destruction of a large portion of the fruit trees growing in nurseries of this country. Peach trees in particular were wiped out by the million by the severe winter, and in many instances apple, pear, plum and quince trees were utterly destroyed.

A further reason why higher prices must be expected for fruit trees is that the cost of everything entering into the production of trees has advanced in price. The price of labor has increased, and the cost of producing a tree is largely labor cost, but aside from this there are many items necessary to the nursery business which cost now more than twice the ordinary price. I refer to rope, twine, burlap, lumber for boxes, labels, paper for lining boxes, etc.

Notwithstanding the prospective advance in price of nursery products, it is profitable to plant fruit trees. The U. S. government has shown its appreciation of the value of fruits as a war product by aiding the industry in many ways.

The Better Way

The most approved method is to roof over an enclosure large enough to hold the accumulated manure until it is ready to be removed to the field. If there is any better method than this it is the drawing of the manure every few days from the stable to the field, where it is spread over the entire surface directly from the wagons.

One reason why manure is allowed to waste as it does on a great majority of farms is that the farmer is driven with his work and has for a valid excuse, as he thinks, that he has no time to give the manure heap proper attention. My opinion is that one great cause of the waste of manure is in not appreciating its value. If the farmer realized how much good money he was losing daily by the exposure of the manure to the elements I am confident he would find some means of saving it.

Manure is valuable aside from the fertilizing elements which it contains. Its application has a tendency to loosen the soil and to start in the soil the action of beneficial bacteria.

Friendly Trees

My fancy has always found something very interesting in an orchard. Apple trees, and all fruit trees, have a domestic character which brings them into relationship with men. They have lost, in a great measure, the wild nature of the forest tree, and have grown humanized by receiving care, and by contributing to the wants of mankind. They have become part of the family; and their individual characters are as well understood and appreciated as those of the human members. One tree is harsh and crabbed, another mild; one is churlish and illiberal, another is free with its bounties. Even the shapes of apple trees have great individuality, into such strange postures do they put themselves, and thrust their branches so grotesquely in all directions. And when they have stood around a house for many years, and held converse with successive dynasties of occupants, and gladdened their hearts so often in the fruitful autumn, then it would seem almost sacrilege to cut them down.—Hawthorne.

Trees Laden With Fruit

At Brockport, N. Y., one of the orchards in this section which have made Western New York apples famous, was that of Foster Udell, known throughout the fruit world as the "Apple King." He was one of the first exponents of various spraying methods and co-operated with state authorities in experiments, which made possible finer fruit. His vast orchards are managed today by his son, William, who gives them the finest care, with the result that they are at all times a beautiful, as well as a remarkable sight, when the work and patience required are taken into consideration.

The trees are laden with beautiful fruit,

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Does not crush apples, but grates or grinds them, breaking the cells, so that when pomace is pressed in sanitary cloth-lined forms, all the juice is extracted. Insures greatest quantity and highest quality of cider. Easily operated by hand or power.

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Apples for Sale from Green's Fruit Farm

We offer for sale this fall about 3,000 bushels of apples in bushel boxes, in barrels or in bulk car lots. Ours are mostly Baldwin, but we have many other varieties. We have long supplied FRUIT Grower readers acceptably. For prices address Green's Fruit Farm, Clifton, Monroe Co., N.Y.

limbs hanging to the ground, without fungus, without worms, clean, perfect fruit. The orchard shows extreme care. The trees have been cut out in the center, letting in the sun and light. There are no waste limbs on the trees. While the ground is worked well, and seedless. Experience has taught Mr. Udell how to spray, and fruit growers throughout the vicinity have come to seek his opinions on how to grow apples.

Mr. Udell has purchased and manufactured nearly 13,000 barrels ready for the fruit. Hundreds of tourists stop at the orchards each season, where the caretakers are ready to show them about, and explain the methods of producing the fruit on a large scale.

What Makes a Good Growing Season?

This season has been marvelously favorable for plant, vine and tree growth in Western New York. The question arises what makes one season a great growing season while another season may be a poor season for growth on the same soil. Surely frequent showers have much to do with the plant growth, but there are other reasons affecting it.

In the poor growing season of 1917 the soil did not break up well in the spring. It seemed to be compacted and sticky. This year the same soil plows up loose and friable and plants that failed on that ground last year are growing luxuriantly this year. Possibly the reason for this change is that the past winter has been severe, and the ground has been well broken up by deep frosts that have disintegrated the soil into fine particles and left it enriched and in the condition to promote growth. These questions lead us to conclude that there are many things yet to be learned about agriculture and horticulture and about the condition of soils and the things affecting soils.

The Science of Pruning

I was greatly interested recently in reading advice about pruning that came from California. After describing four intricate and difficult methods of pruning, the fifth man after long experience simply advised no pruning at all for a commercial orchard except to cut out the suckers, called water sprouts by some. While I do not advise a radical course of pruning or non-pruning, I applaud the simplicity of the fifth man's report or advice. There is much said about pruning that is not understood. Pruning is a difficult thing to describe or teach and every tree needs a different kind of pruning from another. It is true that there would be an abundance of fruit without any pruning whatever except the cutting out of suckers, and yet the man who makes a study of pruning may greatly increase his crop of fruit and may secure larger fruit by judicious pruning.

Better Appreciation of Farmers

Full appreciation is rare. In the past there were few who gave much thought to the welfare of the farm or farmer. Instead of appreciation the farmer was often held up to ridicule on account of his plain clothing and peculiar ways and sayings. Now the people of the earth are beginning to realize that they are owing the farmer and fruit grower a great debt. Farming has been so unprofitable many have been induced to sell their farms and move to the city. In every state there are many vacant farms.

The United States Government learns that it cannot conduct the war successfully without co-operation with farmers. Long delayed help and encouragement is now being given those who till the soil. Loans are made to the farmers by the government. Help has been given in securing an ample supply of fertilizers and in the securing of good seed and improved stock. Assistance and encouragement has also been given by the United States Government in the evaporation of fruits and in the planting of fruit trees and in the transportation of farm products.

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Have you and your household enjoyed the fruits you put up last year? Be sure you have as good a supply this season, with just a little over to help someone less fortunate than yourself.

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We are headquarters for Small Fruits; also for superb Ornamentals: Deciduous and Evergreen Trees, Shrubs and Hedge Plants. We especially recommend Norway Maples and Koster's Blue Spruce for the lawn and Thunberg's Barberry for the hedge.

If planting largely, it will pay you to come to the Nurseries. Anyway, you need our 1918 Catalog. Write today.

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Send me your 1918 catalog and the 1919 catalog when ready.
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Great Shoe Offer



This shoe is built to meet the demands of an outdoor city worker, as well as for the modern farmer. Built on a sturdy lace-blucher last. Special tanning process makes the leather proof against the acid in milk, manure, oil, gasoline, etc. They outwear three ordinary pairs of shoes. Very flexible, soft and easy on the feet. Made by a special process which leaves all the "life" in the leather and gives it a wonderful wear-resisting quality. Double leather soles and heels. Dirt and water-proof tongue. Heavy chrome leather tops. Just slip them on and see if they are not the most comfortable, easiest, most wonderful shoes you ever wore. \$3.25 for shoes on arrival. If, after Paying for them all you expect, send them back and we will return your money. Order by No. X15012.

SEND your name and address, and be sure to state size you want. You be the judge of quality, style and value. Keep them only if satisfied in every way. Be sure to give size and width.

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A toilet preparation of merit.
Helps to eradicate dandruff.
For Restoring Color and
Beauty to Gray and Faded Hair.
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Fruit Notes from California

By J. C. Johnson, California

The green fruit situation at this point is exceedingly fine. Peach and Malaga shipments from San Joaquin Valley are dominating the market. In spite of a few negligible slumps in the markets it is believed here that the market will continue firm throughout the summer.

A big Malaga crop of fine quality is being bought up quickly. The first car of valley Malagas to reach an eastern market sold in Buffalo for \$4,111, a record-breaking price in the history of San Joaquin Valley. Buyers and brokers report that the Malaga crop throughout the valley is in fine condition and packing is progressing rapidly. The average shipment out of the valley totals about 75 cars daily.

Notwithstanding the heavy unloading of Thompsons the market has held up well. Practically all green Thompsons have been shipped. A few late plums are moving. Heavy movements of Tokays will be under way by early September.

Daily Shipment Heavy

All fruits have been moving promptly up to date and though some little delay is expected, it is not believed the car shortage will be serious. The only difficulty is the lack of labor for icing and cleaning cars. In all packing centers adequate labor is on hand. In this county packing plants are working at full capacity at Sanger, Clothe, Melvin, Las Palmas, Del Rey, Parlier, Reedley and Cairns. An average of 60 cars of grapes and 30 cars of peaches are being shipped out of Fresno daily.

The state sugar test is being conducted closer than ever before. Several batches of green grapes have been thrown out. The crop this year, however, indicates that growers have taken greater precautions in cultivation and harvesting.

Impetus for Dried Fruit

The dried fruit situation in the valley was enlivened by a recent notice of the U. S. Food Administration. This was to the effect that packers should sell cheaper than the maximum fixed by the Dried Fruits Committee at San Francisco, if they can make a profit by so doing. Ralph P. Merritt, Federal Food Administrator for California, is advised by Washington that the Food Control Act does not provide any means of disposing of surplus profits and, "as 4 per cent is considered the maximum, it is the packers' own lookout that the prices they quote will not provide an excessive profit, for they most certainly will jeopardize their licenses."

The Grape Outlook

Outside packers are beginning to buy Malaga raisins and to make offerings for Feherzangos. As much as 5% cents has been offered for Malagas, but the movement is not general. Packers say that the fact Muscat, Sultana and Thompson crops are very large, and that the prospects are for about enough to supply the market, indicates that the heavy buyer of unlicensed varieties may face a difficult situation. Although good raisins can be made from the unlicensed varieties, they prefer not to stock up heavily.

Growers who have contracted with packers to take less than the Government prices will receive the Government figures. While there is some manipulation to give the growers a premium for selling, such as offering high prices for unlicensed products, with the hope of making something on the licensed products, this practice is said to be less prevalent than expected, owing to the low 4 per cent margin left for the packers.

Charcoal from Peach Pits

Growers are selling their peach pits to the California Peach Growers, Inc., and other packers for \$7.50. The packers are turning in the pits to the Government, which is manufacturing a charcoal substance for use in gas masks. The peach-pit charcoal is said to be twice as effective as any other substitute in counteracting poison breathed through the soldiers' gas mask. The growers consider it a patriotic duty and are swamping the packers with the pits.

Prosperity quite beyond expectation has struck the melon growers of Turlock this year. The crop is good, and the prices the best that have ever been paid. It is estimated that there will be 3,000 cars of cantaloupes and 1,000 cars of watermelons shipped from Turlock this year.

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"An Imitation
—be it Ever
so Good—
is Still an
Imitation."

When you invest in a manure spreader you are buying an implement that ought to be the most profitable machine on your farm. It will be, if you profit by the experience of others and choose the machine that has stood the test of time. Buy the original, the machine which revolutionized old-fashioned methods, which has always been the leader in quality, in sales and in improvements. This machine is the

NEW IDEA

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Lowdown, light draft. Loads and pulls without undue strain on man or team. Has solid bottom with chain conveyors. Pulverizes thoroughly and spreads evenly. 5 to 7 ft. wide. Spreads from 3 to 15 loads per acre, at your option, by merely shifting a lever. Drives with heavy sprocket chain—no gears.

See the "New Idea" at your dealer's. Don't wait for him to see you as he is probably short of help. Insist on the "New Idea," and don't buy regrets by taking some other machine. If you don't know who sells the "New Idea," write us and we will give you his name. Get our Book—"Helping Mother Nature," which gives much new information about manure and soil fertility. (2)

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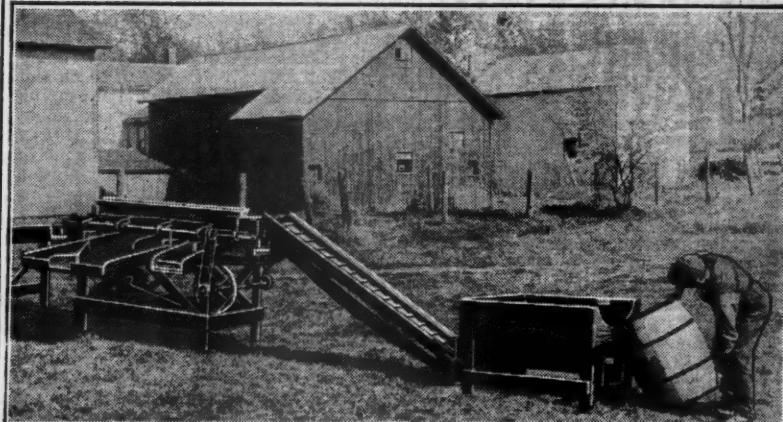
We have found your Spreader to be most satisfactory. The light team, weighing only about 2000, handles it on practically all the farms. The evenness and strength of the work after topdressing with your machine, shows it is a tool no farmer can afford to be without if he wants results. J. H. McCluer.

Two years ago I bought one of your spreaders, last year I got a second one.

A. M. Welch. The New Idea Spreader is one of the best paying tools a man can have on a farm. We spread lime as well as manure with our NEW IDEA Spreaders. Would not think of running my farm without them. A. M. WELCH.

I have used your NEW IDEA Spreader for five years. Am so well pleased with the work it does, that I would not have any other. Has cost me only 30¢ for repairs and that was caused by my own neglect. P. L. WORLINGTON.

Original letters on file. Addresses upon request.



Gifford Fruit Sizer

WITH SCARCITY OF LABOR

THE QUALITY OF LABOR

THE PRICE OF LABOR

AND

THE DIRE NEED AND NECESSITY OF LABOR

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(PLEASE MENTION THIS PAPER)

Kindly Mention American Fruit Grower when writing to Advertisers



View of WITTE ENGINE WORKS, Kansas City, Mo.—Largest, Exclusive Kerosene and Gasoline Engine Factory in the World Selling Direct to User. This factory was established in 1870 and has been continuously under the management of Ed. H. Witte, president and principal owner, since 1884. Since this picture was made, another large factory section has been completed covering approximately 10,000 feet of floor space. It will be used solely for the erection of portable engines and saw-rigs. Saw-rigs are now in great demand on account of the big campaign of the U. S. Fuel Administration urging the general use of wood for fuel wherever practical.

The Jefferson RICHMOND, VA.

Most Magnificent Hotel
in the South

EUROPEAN PLAN

400 Rooms 300 Baths

Rooms Single and En Suite, With and Without Private Bath. Turkish and Roman Baths. Spacious Sample Rooms. Large Convention Hall

RATES—\$1.50 PER DAY AND UP

O. F. WEISIGER, Manager

Only \$2 DOWN
ONE YEAR
TO PAY

\$38

Buy the New Butterly Junior No. 214. Light running, easy cleaning, close skimming, durable. Guaranteed lifetime against defects in material and workmanship. Made also in four larger sizes up to No. shown here. Earns its own cost and **\$125,000** now in use. **30 DAYS' FREE TRIAL** more by wire or mail. **Send in cream.** Postal brings Free catalog folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

ALBRIGHT-DOVER CO., 2249 Marshall Blvd., CHICAGO

Commercial SULPHUR
Brooklyn Brand 99% Pure
For Orchardists and the
Manufacturers of Spraying Material
Battelle & Renwick
80 Maiden Lane - New York

**The Threshing Problem
Solved**
Threshes cowpeas and soybeans from the mown vines, wheat, oats, rye and barley. A perfect combination machine. Nothing like it. "The machine I have been looking for for 20 years," W. F. Massey. "It will meet every demand." H. A. Morgan, Director Tenn. Exp. Station. Booklet 55 free.
Koger Pea & Bean Thresher Co., Morristown, Tenn.

9 CORDS IN 10 HOURS
SAWS DOWN TREES
RUMPS EASY
No Backache
Weights only 45 lbs.
EASILY CARRIED
Folding Sewing Machine Co., 161 West Harrison St., Chicago, Ill.

Lump Jaw
The farmer's old reliable treatment for Lump Jaw in cattle.
Fleming's Actinofom
Sold for \$2.50 a bottle under a positive guarantee since 1890—over 100,000 required if it fails. Write today for FREE—POCKET VETERINARY ADVISER. A book of 197 pages and 67 illustrations. It is FREE.
FLEMING BROS., Chemists, 203 Union Stock Yards, Chicago

Plant Orchard in Back Yard

Everybody who puts out a war garden can be growing a small home orchard in it, says Dr. J. C. Whitten of the University of Missouri College of Agriculture. This small home orchard can produce just as valuable a product for the average family as does the vegetable garden itself. The cultivation given the vegetables is just what is required by the young trees. Such an orchard may comprise fruits that will furnish a succession from the Early Richmond cherry which ripens in May, up to the late keeping apples like Ingram and Lansingburg, which will keep until the following May. One tree of each variety is enough. If, however, a larger number of trees is desired they should be mainly the long keeping winter apples. These varieties are listed in the order of their ripening:

Cherries—Early Richmond, Montmorency, English Morello; Plums—Chabot, Burbank, Wild Goose, Wayland, Damson; Peaches—Early Wheeler, Carmen, Elberta, Krummel, Heath Cling; Pears—Seckel, Anjou, Lincoln, Keiffer; Apples—Yellow Transparent, Duchess, Benoni, Wealthy, Maiden's Blush. These apples will fill the season in succession from June until August. They should be followed by varieties which are at their best and will keep from early winter to late spring—Grimes, Jonathan, Delicious, Stayman, York, Ingram and Lansingburg. Apple trees should be planted twenty-five to thirty feet apart each way; the plum and peach trees sixteen to twenty feet apart.

One-year-old trees, for the most part, should be selected for planting, although in the case of the apple, sour cherry and pear, two-year-old trees will usually transplant successfully, provided they have not grown too large.

Planting and Pruning

The trees may be planted in fall or spring. They should be set just about as deep as they stood in the nursery. Their roots should take their natural spread in the soil, never being bent or twisted in planting. In filling in the soil about the roots it should be tramped very firmly from the bottom of the hole up, so the roots will not dry out.

As soon as the trees are planted their tops should be pruned back somewhat. Peach trees and Japanese plums should be pruned to single whips by removing the main limbs and shortening the main stem to two and one-half to three feet in height. These trees will readily sprout new branching systems from the trunk. Sour cherries, unlike the peach, do not readily sprout new limbs from the trunk. They grow best from the active buds which are at the terminal or newest part of the branches. Three or four main spreading limbs should be left to form the frame work of the tree. The other branches and central trunk should be cut out entirely. Apples, pears and American plums should be pruned back with a medium degree of severity. In general, the side limbs should be cut back one half and the central leader shortened somewhat.

No Waste Ground

The fruit trees should be given as thorough cultivation as corn or vegetables, at least until they reach bearing age. Any kind of garden vegetables, or strawberries and other small fruits, may be grown between the tree rows. If a rank growing crop like corn grows higher than the trees, one row of corn should be left out, preferably north and south, in the tree row, so the fruit trees will not be shaded by it until they get well established. Low growing vegetables or berries may be planted as close to the trees as desired.

RATS COSTLY EATERS

Experts have estimated that one rat will consume 40 to 50 pounds of food in a year. It has also been figured that it requires the continuous work of about 150,000 men with farms, agricultural implements, and other equipments to supply the foodstuffs destroyed annually by rats in the United States. In addition, rats destroy other property, mainly of agricultural origin, the production of which requires the work of about 50,000 men. This gives a total of 200,000 men whose economic output is devoted solely to feeding and otherwise providing for rats.



Here's Sound Pruning Advice

You can "make or break" your fruit or flowers by pruning. Here is a pruning book you need—"The Little Pruning Book," brimful of practical advice. It tells how, when and where to prune for strong, healthy growth.

It has eleven chapters of the soundest and most useful pruning instructions you have ever read. Then, too, it contains some mighty valuable information about the proper pruning shears to use. You'll find Pexto Pruning Shears at your dealers.

Send for free circular, or better still send 50 cents for the book. Your money refunded if not satisfactory.

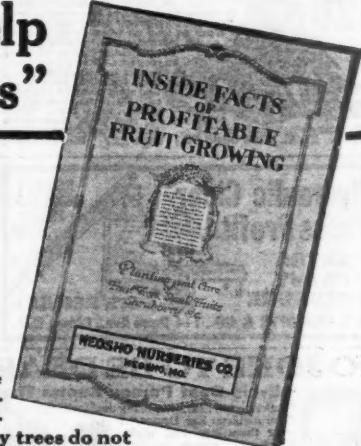
The Peck, Stow & Wilcox Co., Cleveland, Ohio

Address correspondence to 2189 W. Third St., Cleveland, Ohio

PEXTO PRUNING SHEARS

"A Wonderful Help to Fruit Growers"

Beginners, and Experts, Too,
Say: "Most Practical, Concise,
Reliable, Helpful, Up-to-Date,
Guide to Fruit Growing."



"Worth its weight in gold."
"I saved those two trees just from reading your book."
This book tells how, when and where to plant, prune, spray, cultivate, dynamite, fertilize—how to help pay for orchards with fillers and intercrops. Why trees do not bear. Planting distances, etc. 80 pages, many pictures, drawings and diagrams. Price 10 cents. Money back if not satisfied.

What Growers and Experts Say

"Exceedingly useful to every fruit grower fortunate enough to possess a copy."—Prof. W. L. Howard, Univ. of California.

"This little volume is intensely valuable to fruit growers."—Dr. J. C. Whitten, University of Missouri.

"Just the advice and information I have been hunting for, but knew not where to find."—Ivan White, Kansas.

"Wouldn't take \$1.00 for the book and be without it."—R. M. McMillen, M. D., West Virginia.

"It carries the practical work of a horticultural college to the homes of the people."—R. E. Flickinger, Iowa.

"Send me 12 copies for my foremen in charge of my various orchards."—Sen. H. M. Dunlap, Illinois.

Mail this Coupon and 10c. Money back if not satisfied.

Ask Also for Our New Catalog

Lists and describes best apple, pear, peach, quince, plum, cherry, apricots, bush fruits, grapes, everbearing and standard strawberries, roses, shrubs, shade trees, etc. Safe arrival and true-to-name guaranteed. Buy our hardy, heavy-rooted trees direct from nursery. We have no agents.

Neosho Nurseries Co. Box No. 210 Neosho, Mo.

I enclose 10c for your "Inside Facts." Send free catalog also.

Name _____

Address _____





American Fruit Grower CLUB LIST

YOUR FAVORITE MAGAZINES AT BARGAIN PRICES

Knowing the high cost of everything the publisher of the American Fruit Grower has gone to the trouble and extra work to make arrangements with all of the leading publishers, so that we could furnish you with your favorite magazines at wholesale prices and save you money on your year's reading matter.

With this arrangement we can also save you a lot of extra work and trouble. Send your order for all magazines and papers to us. Write one letter. We will do the extra work and guarantee prompt service. Your order will be given our careful attention and magazines started at once. These prices cannot be guaranteed after this month.

Look over these "offers"—pick out your favorite magazines and mail your order today. If you fail to find any magazine desired drop us a postal card and we will quote you price by return mail. Note the big saving on each offer. Add 50c extra to your club of magazines and the American Fruit Grower will be sent three years, instead of one year, other publications one year.

MAKE YOUR OWN CLUBS

Class No.	Publisher's Price	Class No.	Publisher's Price	Class No.	Publisher's Price	Class No.	Publisher's Price
25. American Boy.....	\$1.50	8. Farm Stock and Home.....	\$.75	100. Leslie's Weekly.....	\$.50	7. Power Farming.....	\$.50
3. American Farming.....	.25	17. Farmer.....	1.00	60. Literary Digest.....	3.00	3. Prairie Farmer.....	.50
40. American Magazine.....	2.00	16. Farmer's Home Journal.....	1.00	20. Little Folks' Magazine.....	1.50	45. Presbyterian.....	2.50
7. American Poultry Advocate.....	.50	15. Farmer's Mail and Breeze.....	1.00	15. Maine Farmer.....	1.00	35. Presbyterian Banner.....	2.00
8. American Swineherd.....	.50	14. Farmer's Review.....	1.00	12. McCall's Magazine.....	1.00	16. Progressive Farmer.....	1.00
4. American Woman.....	.25	5. Farmer's Wife.....	.35	15. Michigan Farmer.....	1.00	20. Railroad Man's Magazine.....	1.00
72. Argosy.....	4.00	35. Field and Stream.....	2.00	35. Metropolitan Magazine.....	2.00	20. Reddy's Mirror.....	3.00
75. Atlantic Monthly.....	4.00	16. Film Fun.....	1.00	7. Missouri Ruralist.....	.50	7. Reliable Poultry Journal.....	.50
72. All-Story Weekly.....	4.00	35. Garden Magazine.....	2.00	3. Missouri Valley Farmer.....	.50	25. Review of Reviews.....	3.00
3. Better Farming.....	.25	8. Girl's Companion.....	.50	22. Modern Priscilla.....	.50	1. Saint Nicholas.....	3.00
50. Billboard.....	3.00	10. Gleamer.....	.50	20. Motion Picture Magazine.....	.50	73. Scientific American.....	4.00
15. Black Cat.....	1.00	15. Gleanings in Bee Culture.....	1.00	20. Munsey's Magazine.....	1.00	25. Scribner's Magazine.....	4.00
25. Boys' Life.....	1.50	4. Good Stories.....	.25	3. National Alfalfa Journal.....	.50	55. Smart Set.....	3.00
17. Boys' Magazine.....	1.00	7. Great Divide.....	.50	7. National Farmer and Stock Grower.....	1.00	6. Southern Agriculturist.....	.50
9. Boys' World.....	.50	9. Harper's Bazaar.....	3.00	16. National Sportsman.....	1.00	4. Southern Planter.....	.25
30. Breeders' Gazette.....	1.50	75. Harper's Magazine.....	4.00	15. National Stockman and Farmer.....	.50	7. Southern Ruralist.....	.50
13. California Cultivator.....	1.00	4. Hearth and Home.....	.25	6. Nebraska Farm Journal.....	.50	1. Southland Farmer.....	.50
7. Capper's Weekly.....	.50	7. Home and Farm.....	.50	13. Northwest Pacific Farmer.....	.50	13. Southwestern Stockman and Farmer.....	1.00
70. Century.....	4.00	5. Home Life.....	.35	15. Ohio Farmer.....	.50	8. St. Louis Globe-Democrat.....	.50
40. Christian Endeavor World.....	2.00	15. Hoard's Dairymen.....	1.00	7. Oklahoma World.....	.50	13. Southern Woman's Magazine.....	1.00
30. Christian Herald.....	2.00	20. Holstein's Friesian Register.....	1.00	35. Outdoor Life.....	.50	1. Western Recorder.....	2.00
35. Collier's Weekly.....	2.50	45. House Beautiful.....	2.50	55. Outing.....	.50	15. Sunset Magazine.....	1.50
12. Commoner.....	1.00	3. Household.....	.25	75. Outlook.....	.25	1.20. Swing World.....	1.00
3. Corn Belt Farmer.....	.25	3. Household Guest.....	.25	20. Overland Monthly.....	.25	1.00. System.....	3.00
55. Current Opinion.....	3.00	3. Household Journal and Floral Life.....	.25	20. Pathfinder.....	.25	1.00. Today's Housewife.....	.75
12. Dakota Farmer.....	1.00	27. Hunter, Trader and Trapper.....	1.50	15. Patriotic Magazine.....	.75	15. Tri-Weekly New York World.....	1.00
25. Delineator.....	1.50	35. Illustrated World.....	2.00	10. Pennsylvania Farmer.....	.50	15. Wallace's Farmer.....	1.00
17. Designer.....	1.00	6. Inland Farmer.....	.50	10. People's Home Journal.....	.50	15. Weekly Kansas City Star.....	.25
27. Etude.....	1.50	7. Intermountain Poultry Advocate.....	.50	7. People's Popular Monthly.....	.50	35. Western Recorder.....	2.00
25. Everybody's Magazine.....	1.50	7. Interstate Farmer.....	.50	35. Physical Culture.....	.50	1.50. Woman's Home Companion.....	1.50
7. Everybody's Poultry Magazine.....	.50	7. International Plymouth Rock Journal.....	.50	30. Pictorial Review.....	.50	6. Woman's Home Weekly.....	.50
30. Extension Magazine.....	2.00	100. Judge Weekly.....	5.00	7. Poultry Herald.....	.50	13. Woman's Magazine.....	.75
3. Farm and Fireside.....	.25	75. Kentucky Farmer.....	.50	7. Poultry Item.....	.50	7. Woman's World.....	.50
3. Farm and Home.....	.25	13. Kimball's Dairy Farmer.....	1.00	7. Poultry Keeper.....	.50	12. Young People's Weekly.....	.75
3. Farm and Home Mechanics.....	.25	15. Ladies' World.....	1.00	7. Poultry Review.....	.50	40. Youth's Companion.....	2.00
3. Farm Journal.....	.20	15. LaFollette's Magazine.....	1.00	7. Poultry Success.....	.50		

EXAMPLE:

Farm and Fireside..... Class No. 3
The People's Popular Monthly... Class No. 7

10
Plus 10

20
Multiply by 5

1.00

Correct club price for above magazines including our paper, \$1.00

Below you will find the leading magazines listed under CLASS NUMBER. These numbers indicate the class number to which these magazines belong, and that they are included in clubs at greatly reduced club prices.

TO FIND THE CLUB PRICE WHEN TWO OR MORE CLASS MAGAZINES ARE WANTED:

Simply ADD TOGETHER the class number plus 10 and MULTIPLY the TOTAL by FIVE (5). The result will be the correct club price in dollars and cents.

EXAMPLE:

The Farmer's Wife..... Class No. 5
The Christian Herald..... Class No. 30
Farm and Home..... Class No. 3

38

Plus 10

48

Multiply by 5

Correct club price for above magazines including our paper, \$2.40

A FEW FAVORITE CLUBS

OFFER No. 1

American Fruit Grower.....	\$.50	Our Price
McCall's Magazine.....	1.00	\$ 1.75
Today's Housewife.....	.75	
Total.....	\$2.25	You Save \$.50

OFFER No. 2

American Fruit Grower.....	\$.50	Our Price
Farmer's Wife.....	.35	\$.70
Total.....	1.85	You Save \$.15

OFFER No. 9

American Fruit Grower.....	\$.50	Our Price
People's Popular Monthly.....	.50	\$ 1.00
Woman's World.....	.50	
Total.....	\$1.50	You Save \$.50

OFFER No. 10

American Fruit Grower.....	\$.50	Our Price
McCall's Magazine.....	1.00	\$ 1.50
Farm and Home.....	.25	
Total.....	\$1.75	You Save \$.25

OFFER No. 13

American Fruit Grower.....	\$.50	Our Price
American Poultry Advocate.....	.50	\$ 1.50
Gleanings In Bee Culture.....	1.00	
Total.....	\$2.00	You Save \$.50

OFFER No. 14

American Fruit Grower.....	\$.50	Our Price
Farm and Fireside.....	.25	\$.65
Total.....	\$.75	You Save \$.10

AMERICAN FRUIT GROWER

329 Plymouth Court, CHICAGO, ILL.

Gentlemen:

Enclosed find _____ for which send me the AMERICAN FRUIT GROWER { one year } { three years } and the following papers each for one year as per your offer:

Other papers.....

Other papers.....

Other papers.....

Name.....

Address.....

R. F. D. State.....

YOU WILL BE PROUD OF THIS COLLECTION!

"Home Fruit Collection"

- | | |
|-----------------------|-------------------------------|
| 1 Delicious Apple | 1 Moore Early Grape |
| 1 Early Elberta Peach | 3 Mersereau Blackberry Plants |

It really sounds like a fairy tale, but, nevertheless, we will send this "Home Fruit Collection" to anyone subscribing to the American Fruit Grower for three years for \$1.50. Just think how great it would be to have this fine selection growing in your yard. In a few years you would obtain enough fruit to meet your own wants and also have some to can for the winter.

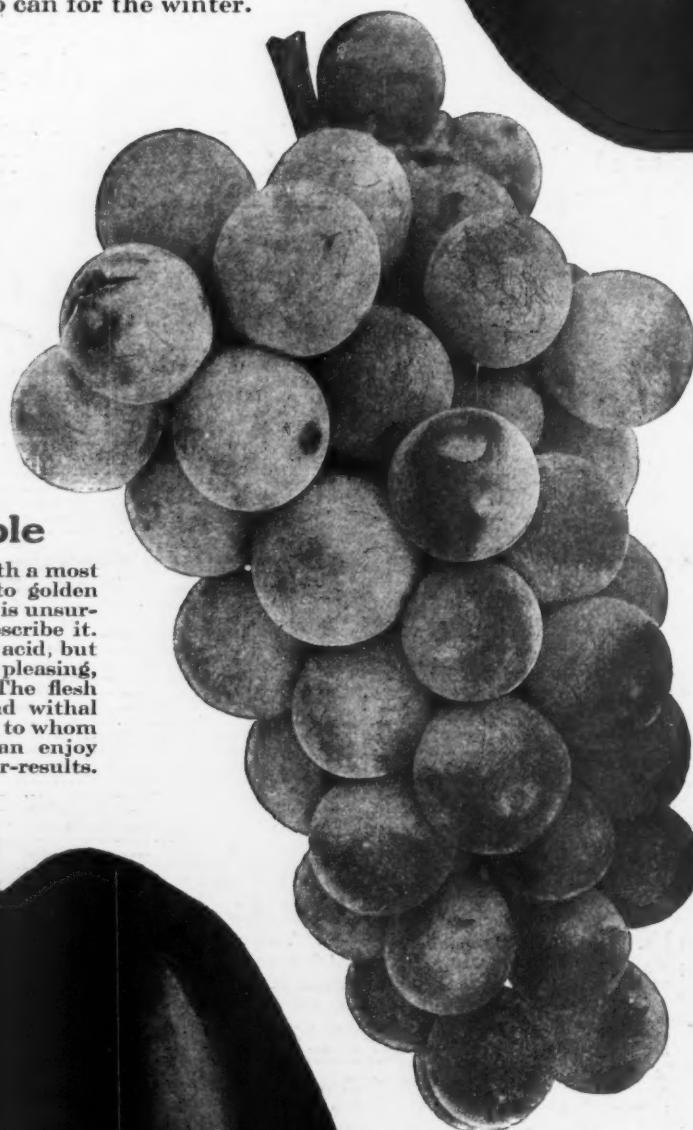
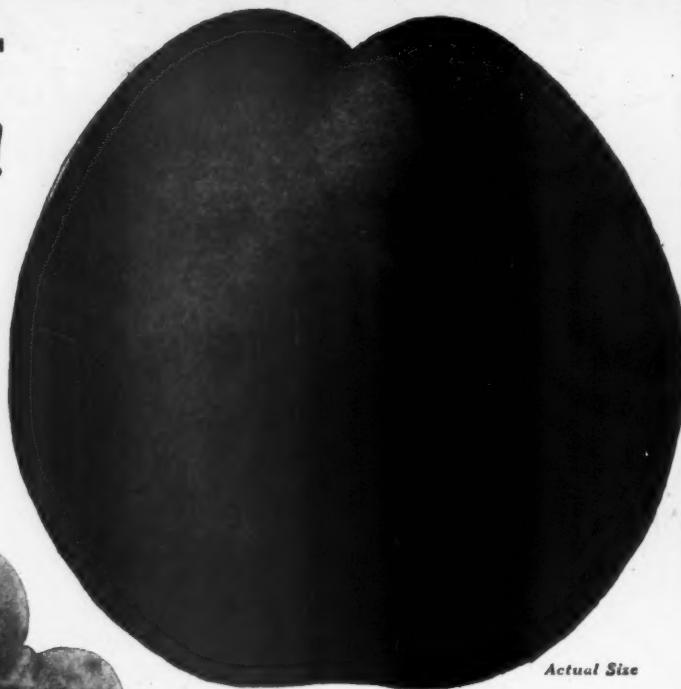
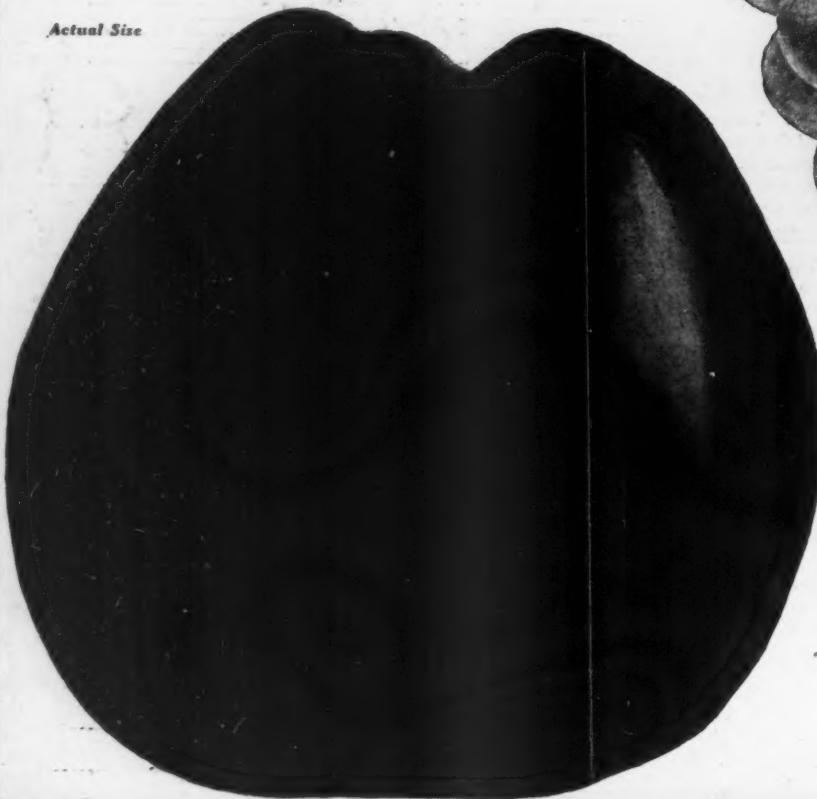
Our Guarantee

We positively guarantee this collection to be in a hardy and healthy condition when received by you. They are packed in heavy cartons and sent to you by prepaid parcel post. Full instructions for planting and care sent with each collection.

One Delicious Apple

Is large, the surface almost covered with a most beautiful, brilliant dark red, blending to golden yellow at the blossom end. In quality it is unsurpassed, incomparable—words cannot describe it. In flavor it is sweet, slightly touched with acid, but only enough so to make it all the more pleasing, with an aroma delightfully fragrant. The flesh is fine-grained, crisp, juicy, melting and whithal delicious. People with delicate digestion to whom an acid apple is wholly indigestible, can enjoy Delicious apples without disagreeable after-results.

Actual Size



One Early Elberta Peach

Is the yellow peach of the century. The huge golden globes of fruit that it bears in such astonishing abundance are now famous wherever peaches are grown. The Early Elberta is a beautiful golden yellow, blending into a glorious red on the sunny side; a strong, protecting skin, covering a luscious flesh that is flavored with a juice as sweet as nectar. It allures with its beauty, gratifies with its quality.

One Moore Early Grape

Similar to Concord in appearance and quality; vine healthy and hardy, succeeding wherever Concord grows. One of the most profitable varieties, and is planted largely in all sections East, West, North and South.

This Offer Good For a Limited Time Only

American Fruit Grower
329 Plymouth Court, Chicago, Ill.

Inclosed you will find \$1.50 for a 3-year subscription to the AMERICAN FRUIT GROWER, including your Home Fruit Collection, which send me in time for spring or fall planting.

NAME _____

Address _____

Town _____

State _____

Tell your friends about this great offer